

AMERICAN VETERINARY REVIEW.

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EDITORIAL.

EUROPEAN CHRONICLES.

EPIZOOTIC ABORTION IN COWS.—This affection is one which in many establishments occasions by its presence great losses. Infectious in its nature when it occurs in a barn, the majority of the occupants are very likely to suffer by it, and many of the treatments that have been recommended to arrest it have failed to give the results that were expected.

Scientists all over the world have turned their attention to it—bacteriologists to find its true nature, and pathologists a mode of treatment, prophylactic principally.

Prof. Lignières some time ago presented to the Société des Agriculteurs de France, a paper upon the subject, and on a prophylactic treatment which had given him excellent results upon females of his laboratories. After renewing his experiments on cows, and obtaining very favorable results, he made a second report, the importance of which cannot fail of attention. It will be found in the pages of this issue of the REVIEW.

The advantages that the treatment offers are such that should it prove successful on trial, Prof. Lignières will certainly have rendered a great service to dairymen. The treatment which is recommended is very simple, consisting in intramuscular injections, administered every few days, of an oily solution of turpinol, which is a derivative of terebinthina, and is already recommended in pulmonary and bronchial affections. One of the objections to the treatment is that it is rather long,

but as it is simple and harmless, it can be left to laymen to apply it.

Those of our friends that will try turpinol will kindly favor us with the results that they may obtain.

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PARALYSIS OF THE PENIS.—We do not know with certainty what is the opinion of the majority of our friends in the United States in relation to this subject, but the experience that we had with the cases that we met has made us believe that paralysis of the penis was in the majority of cases, if not in all, of infectious nature. We remember how they were frequent during the epizootics of spinal and cerebro-spinal meningitis that prevailed some years ago in New York. How troublesome they were! How we were looking for them and guarding against their appearance. In fact, it is upon some of these that we had first the opportunity to perform amputation with suture to the prepuce of the everted incised urethra.

We found that to a great extent the same opinion prevailed amongst the majority of practitioners on this side of the Atlantic, and that for many paralysis of the penis is often the sequel of serious infectious diseases, tedious lung affections, infectious pneumonia, etc.

Prof. Barrier, at the Société Centrale, presented, a while ago, a paper on this subject, in which he gave it as his opinion that paralysis of the penis was in general the result of traumatism—and of a peculiar traumatism—a violent kick on the perineum, applied when to help a horse that is lying down, to get up, his tail is pulled upward. A tail pulled, and a kick on the perineum! To support his theory, the learned professor related minutely the result of observations and of very careful dissection he has made on cases suffering from paralysis of the penis, from the causes above named, and in which he has found marked lesion of the perinean nerves.

While other interesting remarks might be made on the necessary conditions that might exist on the possibility of the "application of the specified cause, the kick," it is certain that

an important question is raised and which veterinarians ought to try to settle by dissection and careful examination of the correct origin and final anatomical condition of the organs involved.

* * *

PUSTULAR DERMATITIS.—The season for clipping horses will soon return,—and with it, no doubt, an affection of the skin, which we remember gave us a great deal of anxiety. In a large fashionable establishment where saddle horses only were kept, we have had for years a cutaneous eruption which was not only troublesome by itself, but was rendered more so by the impatience of the owners, who were in many instances unable to ride their horses, as the eruption very often prevented the application of the saddle. The disease was sure to appear, once a horse was clipped, and *clipped with the most modern machine*,—one to-day, four or five the next, and, in fact, all that had been clipped with the same instrument.

It was a parasitic disease evidently, and its manifestations were very alarming with a few animals. Sometimes a little pimple, followed by a slight oozing, formation of a scab, under which a small granulating surface existed. In other cases several of these pimples would gather; the discharge would be abundant, and regular ulcerations, with somewhat ragged ulcers, remained. It was not uncommon to find inflammation of the skin quite extensive, and the inflammation becoming involved gave rise to regular farcinous (?) cords, which sometimes would be accompanied with suppuration of one or more ganglions. It looked much like farcy. They were, however, nothing else than lymphanitic, pseudo-farcinous eruptions, which Prof. Trasbot has had opportunities to observe, and for which he proposes the name of "Pustular Dermatitis."

Cadiot says that the trouble is not new on the Continent. That it comes from Canada, and after arriving in England reached Germany. Whether it comes from Canada it matters little; we certainly have it in the States. Nocard tells us that it is due to a microbe, and we are positive that the clipping

machine being a means of transport, the prophylaxy is indicated, and we would suggest to our friends to resort to it. See that the clipper does not infect your horse.

* * *

RABIES IN EGYPT.—Decidedly legends die out, as the *Semaine Vétérinaire* informs us that dogs in Egypt are becoming rabid just as well as European and American doggies do. It is to English importation that the disease is traced. A terrier landed in Egypt, in a traveling excursion to see the pyramids, had become rabid and died after inoculating several of his kind. In the *Annales de Belgique* it has been stated that there were no positive proofs that rabies existed before this. But old writings insist on the danger of the bites of snakes, alligators or dogs. In the *Médécine Moderne* I read the story of a man who, having been condemned to die from the bite of one of those animals, killed the snake, crushed the alligator, but died from the bites of the dog.

It is stated that actually the treatment of the bite of a rabid animal in high Egypt is to kill the dog, extract his spinal cord and with earth make a paste which is applied over the whole body of a sufferer. Sometimes the hairs of the dog are burnt and the wound of the man dressed with the ashes. Arabs and people from the Soudan eat the raw liver of the dog. In low Egypt an old remedy having for base a blistering insect, the *kylabris unctata*, is used. "They are decidedly behind time in Egypt."

PROFESSIONAL PHILANTHROPY.

Under this heading in a recent issue (February, 1899—Vol. XXII, page 733) we drew the attention of our confrères to the advantages that might be derived by the organization of an association similar to the one existing in the United States under the name of the "Physicians' Mutual Benefit Association," and to that of France, the "Association Générale des Vétérinaires." After presenting our suggestions, we asked the comments of our

professional friends, requesting their opinions or objections. To this date we have heard nothing.

Feeling, as we do, that much good can be done to all, while living, or to our families after we have gone to the land of everlasting rest, we take this occasion to refresh the minds of the members of the profession, who, we believe, have merely overlooked the question through the numerous cares of active practice.

Of course, to a certain extent we were not surprised at the apparent indifference that our first request received; and we fancy that if even a few among us would heartily take the matter in hand, the difficulties that may present themselves may prove very discouraging at first. Is this a reason not to try it?

Philanthropic ideas are not of a very general human tendency, and their realization means very often not only insurmountable obstacles, but also very unpleasant and unsatisfactory results for those who have promoted them. What of that, if the object is good, and the will for success is there?

Our object is not to benefit a few—it is for the good of all. It is not for the welfare and relief of any of us only when we live and are temporarily or perhaps for our entire professional life disabled; it is also, and, in many instances, principally, for those that we may leave after us.

How many of our friends could some of us name, who were taken off suddenly and left their wives, their homes, penniless. How many could we also recall who have become unable to continue the work of their practice from disease or accidental causes, and have remained for their families useless burdens, invalids to care for, without being able to help them. Are not those sufficient reasons to make the attempt?

The Physicians' Mutual Association of New York counts to-day 1451 regular members, and hopes to reach 2000 before a few years have passed. To-day, after twenty odd years of existence, it gives to the family of each member \$1000 at his death.

Will the veterinarians of America remain blind to the good

that such an association may do? Will they refuse even to discuss the feasibility of its organization? We cannot believe it, and renew our request for opinions, remarks and objections.

A. L.

VETERINARY SERGEANTS.

The lavishly colored bill-posters of the U. S. A. Recruiting Bureau, to be seen in and about New York in post-offices and other public buildings, have the evident purpose to catch the imagination of simple young men to become the proud bearers of so handsome a uniform. Besides the colored pictures, there are given, in a scale below, the different ranks attainable by enlisted men, from the sergeant-major, saddler, sergeant, farrier, cook, etc., down to the private, with the monthly pay of each. In this company we find enumerated in the artillery-arm: *veterinary sergeants, \$25 per month.*

This charge being new to us, we instituted a research at a military post where artillery is stationed, and were informed that such is the new title given to the former "farriers," and that the veterinary sergeants are not expected to be veterinary graduates.

The REVIEW believes that here an error has been perpetrated by some one low in authority, and that the War Department should be immediately informed of this thoughtless offense to the American veterinary profession. Certainly the artillery is entitled to a veterinary surgeon besides the farriers, who can be made quite useful nurses under his direction. As far as the above unauthorized innovation is concerned—unauthorized by Congress—it seems incredible that after the recent deliberations of Congress in regard to our status in the army, the well-informed War Department officials would wantonly expose themselves to our criticism. At any rate, here is again a theme for the American Veterinary Medical Association at its next annual session.

O. S.

PRESERVING OUR STATE LAWS.

The Minnesota veterinarians have recently had some experience in defending their practice act. They have reason to feel proud of the veterinary practice act. As the law now stands only graduates of recognized colleges can come before the board for examination and registration. A bill was introduced in the last legislature which would have opened this act in a bad way and would have compelled the examining board to register non-graduates under certain conditions which hundreds of them could easily have complied with. This bill was carried along on its way through the legislature so quietly that it was not discovered until it had passed the Senate and was well on its way through the lower house. A quick hard fight made by the members of the State association defeated the bill, but it was a close call. Every State that has a good practice act should have a committee of veterinarians appointed residing near the capitol city, appointed for the express purpose of watching the bills in the legislature. Such a course by the New York State Veterinary Medical Society has been the means of saving the laws in the Empire State from pernicious amendments many times every year.

THE SUDDEN DEATH OF EX-GOVERNOR FLOWER, of New York, robs veterinary science of a good friend. His recent gift of \$5000 for a library for the New York State Veterinary College is the most munificent ever bestowed upon our unaided profession, unless the amount donated by Mr. Lippincott to endow the canine infirmary of the University of Pennsylvania was greater. Possessed of an immense fortune, an enthusiastic lover of domestic animals in the higher sense, it is probable that had he lived to a ripe old age he would have done even more for this science when closing his earthly accounts in a manner befitting his tastes.

ORIGINAL ARTICLES.

SOME DISEASES OF ANIMALS THAT ARE TRANSMISSIBLE TO MAN.*

BY COLEMAN NOCKOLDS, V. S., M. D., GRAND RAPIDS, MICH.

It has been known for many ages that certain diseases of animals could be transmitted to man. It is not a new subject, but, nevertheless, it is an important as well as interesting one to us as medical students. It is to be regretted that the close relation of some diseases of man and the lower animals has not been as thoroughly understood by the medical and veterinary professions as they should be, for the benefit of both man and animals. Most probably the chief reason that this subject has not been more fully studied, except by comparatively few members of both professions, is the fact that until the study of bactériology became prominent the true causes of many of the contagious diseases were not known, and many of what we now know to be one and the same condition in man and animals were believed to be entirely separate, both as regards the etiological factors and the pathological conditions. Every day there is being more and more interest taken in this subject by men of ability, and it would be of great benefit to the public at large, as well as the medical and veterinary practitioner, if there were more interest manifested and if this broad field of investigation were more fully dealt with. Some medical men think it beneath their notice to take any interest in a sick cow or a dog that has worms, yet for the benefit of their patient it would be better if they investigated more fully some of those ailments amongst the lower animals, and it is possible that upon a careful inquiry and examination, they could trace the cause of a sickness from which one of their patients is suffering to the family cow or horse, and maybe even the pig or fowl. It is not necessary for a physician to be a practicing veterinary surgeon to under-

* Read before the Students' Society of the Grand Rapids Medical College, March 17, 1899.

stand a few of those diseases of animals that are so closely related to diseases of human beings. Diseases that can be prevented that are both dangerous and deadly, and that are directly or indirectly transmissible from the lower animals to man.

The transmissibility of certain diseases of the lower animals to man was known to the ancient Egyptians, and they believed that leprosy and other loathsome maladies were caused by eating meat from hogs and other unclean animals. Moses prescribed rigid laws prohibiting the Israelites from eating meat from diseased animals. Some of the laws made by the Romans and Greeks relating to veterinary sanitation are in use even to-day. They separated such animals from healthy ones and ordered the burning of the carcasses of affected animals. In the 8th century church laws forbade the use of diseased meat. In 1248, enlightened men, recognizing the dangers of hydrophobia, forbade the consumption of meat of animals that had been killed by dogs and wolves. It is not my intention to take up all the evening going over the history of contagious diseases of man and beast ; it is enough to say that various laws have been in existence since the earliest ages in different countries forbidding the use of diseased meat for food and for the prevention of infection of man by diseases from the lower animals. In the present century investigation of the transmissibility of diseases of the lower animals to man has shown the important relation of some of these diseases to our food supply. It has also convinced the investigators of the necessity of the study of comparative medicine to properly deal with our foods of animal origin and to effectually combat and prevent many of those diseases communicable to man. Modern medicine tends to the prevention of diseases through a better understanding of the means of transmission and perpetuation. With these ends in view some of our medical colleges have established chairs of comparative medicine. It is leading to appreciation of the necessity of establishing a more competent system of sanitary officers that shall properly guard the animal food supply of our people and promote the health of our animals by judicious State laws.

Many of the States are taking active measures in the control and suppression of contagious diseases of domesticated animals.

There are many diseases which are transmissible from animal to man. I will briefly mention a few of the more important ones. Tuberculosis causes about one-seventh of all deaths of mankind. It kills more people than all the wars and outbreaks of cholera, yellow fever and small-pox combined. In 1882 Koch discovered the bacillus tuberculosis, the cause of the disease.

Tuberculosis of man, cattle, and other animals is one and the same disease and due to bacillus tuberculosis. The germ may be in any or every tissue of the body. The disease takes the same form in animals as in man; it is characterized by the formation of tubercles in one or more parts of the system and by its destructive tendency. There are not a few cases on record where a cow affected with the disease has been introduced into a herd hitherto free from it and most of the animals have taken the disease.

Tuberculosis is very common amongst cattle, especially milch cows of the more delicate breeds, but no breed is immune. In some localities 80 per cent. are affected. The animals most liable to the disease after cattle are the pig, sheep and wild animals in confinement. Dogs become affected through licking sputum containing the germs. Horses are sometimes victims of tuberculosis, but not commonly.

Tuberculosis can be contracted by man from animals by eating the flesh, drinking the milk or by the same means as it is transmitted from one person to another, viz., by respiratory or alimentary tract or inoculation. It is mentioned in the third book of Moses, Chapter XXII, that he forbade the consumption of the flesh of animals affected with tuberculosis. This disease has been recognized in most countries and at all periods, although the deadly nature of it was not fully known until late years.

During the 11th and 12th centuries Arabian and Hebrew doctors wrote of it. In the 9th century church laws forbade the use of meat of affected animals. Similar measures were taken in different countries at different times. It is reported that in

1677, 12 students at a Lepez school died of eating affected meat. It has been proven beyond a doubt that animals, especially cows suffering from tuberculosis, are dangerous to human life. Stamping out the disease amongst animals would materially lessen the mortality from consumption amongst the human race.

The clinical diagnosis of tuberculosis amongst cattle is not to be relied upon. But there are methods of diagnostinating this disease amongst cattle which are absolutely positive. Symptoms which should be looked upon with suspicion are a cough, which is of a short, deep character; it is more frequent in the morning when the cow first begins to move about. Moving and drinking bring on an attack of coughing; if the disease is far advanced the cough is painful, spasmodic and dry; there is hardly any discharge. When a large part of the lung becomes involved the animal wheezes during inspiration. Upon percusion there is a dull note over the region of large tubercular deposits and tympanitic sound over cavities wasting away, shortness of breath, anorexia, hide bound, decrease in milk secretion, remittent or intermittent fever. If the mammary gland is affected (and perhaps that is the form most dangerous to man) it will be swollen, hard and nodular; with any or all of these symptoms we must look upon the case with suspicion.

The test for tuberculosis which is most commonly used is known as the tuberculin test. Anti-tubercular serum may be considered as a glycerine extract of the tubercular germ. It contains no living germs of tuberculosis and therefore does not communicate the disease to healthy animals. The milk of a cow is unaffected by its use, and it does not interfere with gestation, even if the cow is ready to calve. It is manufactured upon a large scale by some of the manufacturing chemists, as are also other serums, diphtheria, tetanus anti-toxin, streptococcus, mallein, etc. The method of using the tuberculin test is first of all to get the average temperature of animal to be tested, which can be done by taking the temperature per rectum about every four hours for twenty-four hours before applying the serum. Then inject the serum subcutaneously at any convenient point

under the skin of the shoulder or at your discretion. If within twenty-four hours after the injection has been made the temperature should rise more than two degrees, you may be pretty sure that the animal is suffering from tuberculosis. The dose of tuberculin to be used varies; some manufacturers advise more than others, but directions generally can be had with the medicament. It is not advisable to apply the test while a cow is in heat, or to change the habits of the animal during the time of using the test. Tuberculin has been advocated for the cure of consumption among human patients, but no doubt those cases reported as cures from its use were not tuberculosis at all, as experience amongst the lower animals shows that the application of tuberculin, even to a mild case of tuberculosis, causes the disease to manifest itself in the most acute form. Of course, the most positive method of diagnostinating tuberculosis is by locating the germ. It is often hard to do in the lower animals, but examine the discharge from mouth, nose, vagina, rectum or milk by the ordinary methods; to the milk add a little acetic acid, and then strain and examine.

Another method is by inoculating a small animal, as the guinea-pig. There would be found upon post-mortem all the pathological lesions of tuberculosis, and the bacilli can be located by usual methods in the tissues. Suspected cases should be reported to either the State or local board of health, who will in most cases make necessary inquiries and examination and order the destruction and disposal of the affected animals.

Hydrophobia or rabies: A contagious disease of the canine, which can be transmitted to man. Generally man becomes infected through being bitten by a rabid dog directly or by another animal that has been bitten by a rabid dog. As you know, this disease is quite common in this and other countries. Proper regulations not only lessen its frequency, but may completely suppress it, as has been shown in Sweden, where not one death has occurred since 1870, though the previous mortality was eight to ten persons yearly.

Rabies in the dog may take two forms, the mute or the

furious. In the furious form from twelve hours to two days after the animal has been bitten there is depression ; the animal is gloomy and anxious. The dog no longer obeys his master. Soon he becomes defiant, restless and cross (in rare cases they are extra affectionate for a few days), the animal licks and bites the wound, refuses food, and bites anything it comes in contact with ; it swallows foreign bodies, as pebbles, nails, pieces of wood, etc. ; it snaps at the empty air and runs about biting everything that it comes in contact with ; often it bites foreign bodies so hard as to fracture its jaw. It howls with a peculiar, unnatural coarse note, which ends in a higher key. The head is hot and fiery, the eye wild and glazed, the larynx paralyzed, which causes ptyalism. The mouth is generally kept open. It becomes emaciated and gradually gets weaker and weaker, and dies about the tenth day. In the mute form there is no excitement, paralysis comes on quickly, especially of the lower jaw, and the animal dies about the third day. All animals can become affected with hydrophobia by bites from a rabid animal. The cat is the most dangerous to man, because of its claws. They will jump on the face and attempt to claw and bite it. They are no longer afraid of dogs. A person may be bitten and the wound heal completely, and the symptoms of the disease not develop for weeks or months. The poison that causes it is found in its most concentrated form in the brain ; in a more dilute form in the saliva, tears, milk and pancreatic juice, perhaps in small quantities in the blood.

If consulted by or called to see a patient who has been bitten by a rabid dog one of the first questions of the physician ought to be : Where is the dog ? If that dog is living it should be confined and the symptoms watched ; if hydrophobia develops within three weeks there is yet ample time for the patient to receive treatment. Very likely what was taken for madness in the dog was merely one or more symptoms of some other disease ; if so the patient should be informed and all fears set at rest as concerns hydrophobia. There is no doubt but that many people bitten by dogs supposed to be suffering from rabies worry

and fret themselves into a dangerous illness or even to death, when if they had been informed that the animal was not mad would never have had a day's sickness; however, the wound should always be cauterized at the earliest opportunity. It does no harm and may be the means of preventing further trouble.

If rabies should develop in the dog that has been confined, no time should be lost in sending the person bitten to one of the Pasteur institutes for treatment. Pasteur discovered that a serum containing an attenuated toxin derived from the brain and cord of an animal suffering from rabies would prevent the occurrence of the disease in those who have been bitten by animals undoubtedly rabid. On this principle Pasteur institutes have been established in which preventive inoculations are made with quite satisfactory results. It has been impossible to estimate how many cases of hydrophobia occur in this country during the year, but in the older countries where records are kept, it was found that in three years in Belgium, England, France, and Germany there were 6538 cases.

The death rate without local treatment is 83 per cent. The death rate with local treatment is 33 per cent. The death rate with Pasteur treatment is 0.6 per cent. This speaks for itself. The preventive measures taken in countries where hydrophobia is almost stamped out are muzzling of all dogs out on public thoroughfares, especially during hot weather, high dog tax, killing off all stray and ownerless dogs and public drinking troughs for dogs. I might add that a system of preventive inoculation of all dogs would still tend to reduce the number of cases of hydrophobia.

Glanders, a contagious disease affecting the horse, ass and mule, is transmissible to man. This disease is caused by the mallisti bacillus. It is characterized by a discharge from the nose, the formation of nodules in various parts of the body. The lymphatics are the organs most frequently attacked. The lesions may be external or internal or both. The animal becomes emaciated, looks unthrifty, although in some cases there may be no visible symptoms except perhaps a slight discharge

from the nostrils (latent glanders). The bacillus is contained in the discharge and man may become infected by the discharge coming in contact with abrasions on the skin or by handling articles which may have come in contact with the diseased animal and thus become infected, articles such as harness, blankets, mangers, drinking troughs, etc. The discharge, which is constantly secreted and often in large quantities, acts as a perpetual source of contagion, not only while in the fluid state, but also when dry it retains its virulence for a long time. Persons who handle glandorous animals or in any way come in contact with them are liable to contract the disease. To diagnosticate glanders when the clinical symptoms are not sufficiently developed use mallein, which is an extract of the pure culture of the bacilli of glanders in the same way and by the same methods as those used when applying the tuberculin test or by the methods of staining or inoculation mentioned in regard to tuberculosis. All glandered horses ought to be destroyed and their carcasses burned.

Anthrax is a contagious febrile disease produced by the entrance of the anthracis bacillus into the system. It affects all domesticated animals and most wild animals and is readily transmitted to man. In 1617 this disease was prevalent in the bovine species in Europe and killed 60,000 people.

Anthrax is a miasmic disease. It exists in certain localities and breaks out at certain periods each year. The animals most commonly affected are cattle, sheep and pigs. It takes three forms: the hyper-acute, acute, and sub-acute. It is the hyper-acute and the acute forms that generally affect cattle and sheep, and the sub-acute form affects man, pigs and dogs. In the hyper-acute form death occurs quickly, generally within an hour; in the acute about thirty-six hours; in the sub-acute death occurs in about six days. There is intense fever, anorexia, formation of a characteristic tumor, exit of blood from all the natural openings, and after death a rapid decomposition of the cadaver. All the tissues are full of the bacilli, as are the excretions and secretions. In man anthrax takes the sub-acute

form. It is transmitted not only by direct contact, but by the intermediation of insects that have come in contact with the diseased animals.

Animals grazing where carcasses of animals dying of anthrax have been buried are sometimes infected by the spores of germs which have been brought to the surface by earth worms.

From liability of workers in wool to this disease it has been called woolsorters' disease. It is generally called malignant pustule when affecting man, and can be contracted by handling meat, hides, and even leather made from the skins of animals that have been victims of anthrax.

Vaccina, or cow pox, is an eruptive contagious fever of the cow, transmissible to man.

The disease is usually taken from one animal to another by the hands of the milker, clothes, bedding, etc. The virus as contained in the eruption constitutes the well-known vaccine. In 1798 Edward Jenner discovered that by inoculating or vaccinating people with the products of the vesicles of cow-pox, rendered them immune from small-pox. From that time the process has extended over the civilized world, and proved an incalculable boon to humanity. Although cow-pox and small-pox are closely related, investigation has proved that they are not identically the same disease.

Actinomycosis (Lump Jaw): A chronic, infective disorder affecting cattle and other animals and transmissible to man.

This disease is caused by a vegetable fungus, actinomycetes. It is characterized by the formation of neoplasms, most commonly upon the lower jaw, but may form on any part of the system, most generally in the alimentary canal or lungs. The general symptoms of the disease resemble those of pyæmia.

Actinomycosis is transmitted to man by inoculation and the pathological conditions observed in man are identical with those found in cattle. The pig is most commonly affected next to bovines.

Aphthous Fever (Foot-and-Mouth Disease) is an acute infectious disease, affecting chiefly cattle, sheep and pigs, but

other animals may become infected. It is a very active disease and soon spreads over large areas of country. The animals are feverish, and in from three to five days the mucous membrane of the mouth and the integument between the hoofs of cattle swell and little grayish vesicles develop on the edges of the tongue, the lips and gums, and in the cow vesicles appear upon udder and teats. The milk may become of a muddy consistency.

It is not uncommon for this disease to be transmitted to man through direct contact, or to children from drinking the milk, or even through butter or cheese made from the milk from aphous cows.

The consumption of the meat of cattle that are suffering from measles of the ox, a condition caused by the encysting of the bowel, forms of the *tænia saginata* in the muscles and other portions of the body, is the source from which the most common form of the tapeworm, the *tænia saginata*, of man comes.

A measly hog or the disease known as *cysticercus cellulosæ*, is infested with the cyst form of the *tænia solium*. Eating the flesh of a pig so infected will produce the adult *tænia solium* in man, which is especially dangerous because of the liability of man to auto infection, and thus contracting *cysticercus cellulosæ* himself.

Echinococcus of man is a disease in which the larvæ of the *tænia echinococcus* becomes encysted in various tissues, principally the larval. The *tænia echinococcus* is a tapeworm infesting the dog, and the eggs are swallowed by man in drinking water and by other means. The disease in man is not amenable to treatment and eventually proves fatal. Cattle and other animals suffer occasionally from *echinococcus* in this form. *Tænia cucumirena* sometimes gain access to the intestines of man through swallowing the dog flea or louse. It exists in them in its larval form. *Bothrecephalus* later exists in the larval stage in the muscles of the pike and other fish and sometimes exists in the bowels of man due to ingestion of fish containing the larvæ. It is the largest tapeworm which infests man.

Trichinosis is a disease of man caused by the ingestion of

pork containing the encysted larvæ of the *trichina spiralis*, a worm which inhabits the intestines of the pig.

There are many other diseases and conditions of animals which are transmissible to man, such as tetanus, diphtheria, certain fevers, flukes, linæa, titana, soscapi and others. Many of these conditions can be almost entirely prevented by sufficient sanitary police regulations: Meat and milk inspection, by appointing competent men in each district to examine and watch over the animals in that district. For the successful carrying out of preventive medication it will be necessary for the educated veterinary surgeon and physician to work hand in hand. It will be hard to draw the line in the near future where the physician's work leaves off and the work of the veterinary surgeon begins in the great army of disease fighters whose motto will be: "United we succeed, divided we fail in the practice of preventive medicine."

AN ARRANGEMENT FOR MUNICIPAL OWNERSHIP OF SLAUGHTER-HOUSES.

BY LEONARD PEARSON, V. M. D., PHILADELPHIA, PA.

Read before the evening session of the Pennsylvania State Veterinary Medical Association, March, 1899.

The American people are the greatest meat eaters of the world, with the possible exception of the inhabitants of Australia. The beef-eating British consume nearly as much meat per capita as the Americans and after these people we have the following arranged in the order of the amount of meat consumed per capita and per annum: the inhabitants of Sweden, Norway, France, Germany, Belgium and Holland, Austria, Hungary, Russia, Spain and Italy. The average annual consumption of meat in this country is about 115 pounds. The table that I have just given seems to support the assertion that the capacity of a people is indicated largely by the amount of flesh consumed.

Philadelphia uses about 125,000,000 pounds of meat every

year. A great deal of this meat is prepared in Chicago and the other meat-packing centres of the West. But a large proportion of it is prepared in and about Philadelphia. Of the cattle that are slaughtered here, some are steers bred and fed in the West, others are Western bred and Pennsylvania fed and others are young cattle reared in this and neighboring States, while still others are dairy cows that have been fattened for the butcher or they are worn out, thin and oftentimes diseased cows that have become unprofitable for dairy purposes and are not suitable for feeding. In addition, the immediate vicinity supplies a considerable number of bulls and many veal calves.

Part of this meat of local origin is killed in the slaughter-houses of Philadelphia and part of it in the small suburban slaughter-houses or on the farms. The local slaughter-houses vary in capacity, from the little one in the yard back of the retail shop, where but one or two cattle can be handled a day, to the large one in West Philadelphia with a capacity of several hundred. They vary as much in regard to sanitary arrangements, facilities for providing wholesome meat and in cleanliness as they do in size. Some of the meat that is dressed outside of but near to Philadelphia is prepared in improvised slaughter-houses, a corner of the wagon shed or even of the barn yard. Many of the cattle killed in and about Philadelphia come from districts where tuberculosis is very prevalent. Instances have come to light where the owners of tuberculous cattle have sold them to the butcher after it was plainly evident that they were diseased and, clearly, to avoid losing them by death. There are dealers who make a business of going about in dairy sections of this and other States to gather up all of the old, diseased and worn out cows that are able to walk. Such cattle are called "Bolognas" and most of them are probably used in making the sausage that goes by that name.

Some of the smaller slaughter-houses in Philadelphia are of the most filthy and abominable character and should be regarded as nuisances in the neighborhoods in which they exist. Their walls, floors and fixtures are smeared and besmattered

with blood, manure and pieces of fat and meat that appear to have been accumulating since the buildings were erected, years ago. The live cattle are kept in compartments immediately adjoining the rooms in which animals are killed and meat is stored. The cattle are killed at irregular times, occasionally early in the morning or at night, and the methods of dressing the carcass and preparing the meat for market are frequently of a dirty and unwholesome character.

For the purpose of inspecting the meat slaughtered in Philadelphia there are two "meat detectives," who have associated with them two veterinarians to be called in when the detectives find conditions that they consider suspicious. These detectives visit every day as many slaughter-houses as it is possible for them to reach, making a short visit at each one. If, during the time of their visit, they should happen to find diseased organs or diseased meat, the veterinarian is called on for an expert opinion and the meat is condemned, or not, according to his verdict. During the ninety-nine-one-hundredths of the day when the meat inspector is not present the slaughter-houses are not under inspection or control. It cannot be said, therefore, that there is a general system of meat inspection in Philadelphia. The inspectors examine as much meat and as many cattle as it is possible for them to see and are constantly employed. By their efforts a large quantity of dangerous meat is kept out of the market and the health of the public is protected to an important degree, but the force employed by the city is utterly inadequate. I do not wish these remarks to be construed as a criticism of the cities' meat inspectors. It is rather a criticism of the city's meat inspection system, a thing for which the inspectors are not responsible. The need of an efficient and thorough system of meat inspection is discussed by others at this meeting, so that I need only touch upon this portion of the general subject. Since the bacterial origin of many diseases has been demonstrated and the close relationship of some diseases of man to those of animals has been established, the importance of rational meat inspection has been greatly em-

phasized. More than this, it is known that many parasites are transmitted to man through meat, and it is known that meat is composed of fragile compounds that change readily and render meat irritant or toxic unless it is handled in a cleanly, careful way and is kept at a proper temperature. This need for meat inspection is greatest in the portions of the country that have the largest proportion of diseased and worn-out animals that are unfit to become part of the people's food supply.

The need for meat inspection is as great in the eastern part of the United States as it is in many parts of Europe, where it is carried out with the greatest degree of thoroughness and care.

The early meat inspectors of Germany labored under the disadvantage that the meat inspectors of Philadelphia are now forced to encounter. It was soon found, however, that these disadvantages were great enough to prevent meat inspection from making the important contribution to the cause of public health that was expected of it and, after many experiments and much thought, the plan was adopted by about 600 cities, of causing the business of preparing meat-producing animals for food to unite in central establishments, usually the property of the municipality.

The system of municipal slaughter-houses is now so well established in Germany that every city that makes any pretense to progress is supplied with one of these important adjuncts to its sanitary system. Where the cities do not own slaughter-houses, they regulate the business of slaughtering in private slaughter-houses by requiring these establishments to meet a certain standard, and they prescribe the time during which animals may be killed for food, so that the official inspectors may be on hand to examine every animal and carcass. Where the city owns the slaughter-house it requires all slaughtering carried on within its limits to be done in this one establishment. Thus, slaughtering-houses are under the constant supervision of veterinarians, and all meat-producing animals are examined during life and again at the time they are killed and dressed.

Municipal slaughter-houses are in most cases model establishments. They contain all of the latest improvements in construction and all of the approved modern appliances for the rapid, economical, and wholesome preparation and preservation of meat. They are in most cases supplied with smooth cement floors suitably drained. They have brick or tiled walls, hot and cold water, arrangements for rapidly hoisting and moving animals and carcasses, and appropriate and adequate cold storage facilities. They are plentifully illuminated and ventilated and are kept in a condition of perfect cleanliness, and altogether are as different from some of the small, close, dark and ill-smelling little slaughter-houses of Philadelphia as a palace from a hovel.

This system of controlling the meat supply is not confined to Germany alone, but is followed in nearly all parts of Europe and by a number of cities in Great Britain. In this country, the cities of New Orleans and Montgomery have also adopted the municipal abattoir system and with the most satisfactory results.

When carried out thoroughly and properly the control of the meat supply gives important returns in many ways. It is, first of all, a great protection to the consumers of meat and in the cities in which it has been established, helminthic diseases, meat poisoning and tuberculosis have been very materially restricted. Moreover, the meat that reaches the market is of a more attractive and nutritious character, and can be eaten with confidence and relish. This alone is a great gain. A general system of meat inspection is also of the highest value in controlling the diseases of animals. The statistics as to the prevalence of disease made by meat inspectors are the most complete and valuable that we possess. Another advantage of this practice is that it helps the honest butcher who wishes to furnish nothing but good meat to his customers, because it makes it unnecessary for him to compete with the man who sells carrion. Objections to this plan come from two sources: From the owners of private slaughter-houses, who do not wish to be disturbed, and from people who believe that if all slaughtering

were done in large municipal abattoirs meat would be more expensive and, therefore, more difficult for the poor man to obtain. As to the first objection, it may be said that *every* advance interferes with earlier arrangements and upsets pre-existing conditions. The stage-coach proprietor and the canal boatman objected to the building of railroads. All labor-saving machinery has been objected to by the people that it has displaced, but reforms that improve general conditions and are good for the public, cannot be permanently halted by the interests of individuals, and history shows that, in the end, the suffering that was prophesied from these changes has not come to pass. But many proprietors of slaughter-houses have at this time large interests and vested rights, that must be respected. If the city of Philadelphia shall ever wish to establish a municipal abattoir it will not be necessary for all butchers to move into this establishment at once. Those who maintain their private plants in conformity with certain regulations, may be permitted to continue them for a stated period, while the smaller, filthier concerns that cannot be improved and are nuisances, should be forced to discontinue as isolated establishments and go into the large slaughter-house belonging to the city. For the conveniences provided, a reasonable rental should be charged, and those who thus purchase the right to use the facilities of the municipal slaughter-house would be able to carry on their business under the best conditions; conditions that it would be absolutely impossible for most of them to provide at their own expense. They would be enabled to do their work in a proper, cleanly way; they would have the advantage of cold storage facilities to a degree that the individual could not have; they could dispose of their condemned organs and carcasses to better advantage than now; they would have the advantage of easy access to the stock yards and would thus avoid the necessity of driving cattle through the streets, a practice that blocks traffic, frightens people and at times occasions serious accidents.

I believe that if all the meat killed in Philadelphia were pre-

pared in a large central slaughter-house under municipal control there would soon arise a strong demand for this meat. It would be preferred and would make its own market. I see no other way by which the gradual destruction of our local slaughtering industry by the competition from the Western packers can be averted.

Now, as to the second objection to this plan, namely: the allegation that the cost of meat prepared in this way would be increased and the poor man would have greater difficulty in providing meat for his family. This objection is old, it has been made and met in Germany as many times as there are public slaughter-houses, and has been discussed thoroughly by representatives of the meat industry, sanitarians and others.

In 1897 the director of the municipal slaughter-house in Stockholm instituted an extensive inquiry for the purpose of obtaining information on the following points:

1st.—Whether it has been shown that the introduction of municipal slaughter-houses and obligatory inspection of meat brought into the city from outside has made meat more expensive, and, in such case, to what extent has the price been increased.

2d.—Whether the municipal slaughter-house has been an earning institution.

3d.—As to the charges for killing and inspection.

Information on these points was received from 403 cities in Europe and it was found:

1st.—That the price of meat had not become increased by the requirements as to the slaughtering and inspection.

2d.—That the public slaughter-houses were paying institutions.

3d.—That the price of meat depended upon the relation between supply and demand, and especially upon the price of cattle.

4th.—That the quality of the meat improved after the public slaughter-houses were opened, so that there was relatively a diminution in price.

5th.—That sometimes the price of meat went up immediately after the opening of the slaughter-house, or that the butchers tried to increase the price, but very soon, as a result of competition, the price returned to its former level.

6th.—That in cities with public slaughter-houses and obligatory inspection the price of meat was not higher than in neighboring cities without these institutions.

7th.—That the freedom of occupation was increased rather than diminished after municipal slaughter-houses were erected, because every one who fulfilled the public requirements had the privilege to use the establishment. (Previously meat producing animals could be slaughtered only by those who possessed the necessary premises and appliances.)

This extensive investigation has shown what economists would expect, but what there has been a great tendency to doubt. It has shown that, by the species of co-operation that must be practiced where large, fully equipped and conveniently arranged municipal slaughter-houses are provided, meat can be prepared at a lower cost than where it is prepared in a multitude of small slaughter-houses.

EPIZOOTIC ABORTION IN COWS--TREATMENT.

BY PROF. LIGNIERES, FRANCE.

If several pregnant female guinea-pigs, four or five weeks in that condition, are inoculated under the skin with 1 or $\frac{1}{2}$ c.c. of culture of the bacillus, they regularly abort two or five days after the inoculation, except if the day after the operation injections of 1 c.c. of an oily solution of turpinol to one-tenth are made; then most of the treated animals do not abort.

These results have decided me to try this treatment on cows; and I was fortunate enough to obtain the assistance of a veterinarian who carried out the experiments under my direction.

First Experiment.—Stable of Mr. F.: Abortion began in August, 1896; 7 out of 10 cows had aborted. In 1897 the disease returns, but injections of turpinol are started the end of October of

the same year. They are made in doses of 10 c.c. every two days. Out of 8 cows treated, 7 delivered well; one only aborted for the second time when eight months gone. Since that, abortion has entirely stopped and the owner reports the calves in excellent condition.

Second Experiment.—Stable of Mr. G., containing 16 cows. Abortion appears in the month of June, 1897. All the cows aborted between June 1st and November 15th. They were 6 and $7\frac{1}{2}$ months pregnant. Injections are begun November, 1897, as follows: During three months every second day, three months every third day, two months every fourth. The 16 cows, pregnant or not, were treated, and of that number, five were sold as nymphomanes; one not pregnant is still in the barn, one aborted in her eighth month. The other nine calved at term; the calves are fine.

Third Experiment.—Herd of 27 good milking cows. No fresh cows have been introduced in the stable for two years, but three calves, four months of age, coming from an infected stable, have been placed with them. Abortion began end of August, 1897. Until April 1, 1898, 18 cows have dropped their calves. It was their first, second or third calf. Injections were begun April 1, 1898, and made regularly every three days; they are still continued to this date (December, 1898). From April 1st to June 1st, five cows more aborted. Since no further trouble has occurred; 15 cows that had aborted before have dropped very healthy calves; out of these cows nine are now pregnant one or two months; the other three have not been mounted. Let us add that four of the cows that aborted between April 1st and June 1st are now pregnant and to all appearances will carry to the end. Two cows were sold as nymphomanes, not from tuberculosis, as proved by tuberculin.

Modus Operandi.—The solution is made as follows: Turpinol, 1 part; oil, 9. The liquid is injected every three or four days, 10 c.c. for a dose, not under the skin, but in the muscles, those of the neck, shoulder or thigh. As much as possible successive injections will be made in different parts.

Abscesses never form ; there is sometimes a small œdematosus swelling. The cows stand the operation very well, and the taste of the milk is not altered. Evidently the treatment is long, but it is so simple that a layman can readily be initiated with it. Spirits of turpentine might be used instead of turpinol, but would give rise to great irritation and would probably not give as good results.

TUMORS.

BY ROBERT FORMAD, V. M. D., PHILADELPHIA, PA.

Read at the annual meeting of the Pennsylvania State Veterinary Medical Association,
March, 1899.

The study of tumors constitutes one of the most interesting as well as useful chapters in the study of pathology. The interest is not only from the standpoint of teaching or the examination room, but also from the practical application for the busy practitioner and surgeon who is concerned not in the latest views, not in the charms of the microscopical picture that a section of the tumor shows to the pathologist, but is more interested whether that tumor will return or not return after removal, and whether that tumor has given or not given any metastasis to internal organs, and after the operation has been successfully performed the metastatic nodules continue to grow with renewed vigor and spoil the result of a successful operation. Your Committee of Arrangements in assigning me to give this demonstration, impressed in the most forcible manner that this should be not a scientific lecture, for which you have no time, but a demonstration, and in presenting to you this subject, I will endeavor to make it as practicable as possible. A few brief remarks, definitions, and classifications are, however, indispensable to treat the subject in a systematic manner. These remarks, I hope, will show that even the most scientific surgeon in performing an operation does not need to hold the scalpel in one hand and the microscope in the other to have success, but every surgeon before plunging the knife into the tissues even of the dumb

beast, must bear in mind that there are benign and malignant tumors, and that the recidivety would greatly influence his prognosis, even if he cannot recall the exact microscopical picture. When we want to treat disease it is essential to observe and know not only the symptoms and peculiarity, but also the name of the disease to which the symptoms belong, and when we wish to remove a tumor we must remember the kinds of tumors that pathology teaches. Tumors are studied under the heading of complete morbid processes, termed pseudo formations, leading to the development of useless tissue in contrast to regeneration, the term new tissue formation.

Definition—(a) Clinical: A tumor is a swelling developed without the symptom of inflammation; it is permanent and has a tendency to stay and increase in size. (b) Anatomical: A tumor is a multiplication of preexisting tissue above physiological limits, abnormal as to space and tissue.

Synonyms: Hyperplasia, swelling, neoformation, neoplasm.

Inflammation neoformation may resemble tumors to such an extent as to make the distinction an exceedingly difficult one, even on morphological and physiological bases. Tumors originate spontaneously, but do not disappear so, while inflammatory neoformations do not appear spontaneously, but may disappear so.

Pathogenesis of Tumors.—Numerous theories have been advanced from time to time to explain the causes of tumors, but up to the present day our theories have been hypotheses failing to explain the causation of tumors.

1. *Dyscrasia or diathesis*, theory advanced by Billroth and older writers, described formation of tumors to a diseased state of the fluids of the body and an inherited peculiarity; if this be true, however, the question naturally would arise, when did the first tumor start, and if Adam was created with the first tumor it is strange that a tumorous nation had not been developed.

2. The *mechanical or inflammatory theory* comes next in existence and ascribes the formation of tumors due to irritants—*e. g.*, epitheliomia in pipe smokers, and to injuries. Clinical

observations show this to be true in a number of sarcomas and carcinomas. But not every injury leads to tumors ; if it would, not many of our forefathers would have reached a good old age, as the mode of bringing up in those days was quite different and more forcible than now. Athletics would never have reached the present state of development ; we would be deprived of the pleasure of seeing the pleasant countenances of Dr. John Adams and Dr. Sensman if this mechanical theory were unimpeachable.

3. The embryonal or evolutional theory of Cohnheim ascribes the formation of tumors to errors of development during embryonal life when certain cells having been displaced develop the tissue for which they were intended, even if these cells have been moved to another locality ; it is the only true way in which we can account for the formation of certain congenital tumors, as the dermoid casts or certain mixed tumors. It has more limited application than the preceding ones.

4. Nervous theory ascribes the formation of tumors to distribution in the traphic functions of the nervous system, but is more of an imaginary hypothesis than a reality.

5. Parasitic theory assumes that parasites are responsible for the formation of tumors, but it will be hypothetic, as the parasites are not demonstrated.

CLASSIFICATION OF TUMORS.

1. By nature (which means, whether they are benign or malignant).

2. By shape ; this depends upon the manner of growth, their situation and the influence of the surrounding parts.

3. By structure or hystogenetic classification, which is most convenient for a systematic study in the laboratory.

The classification by nature is into benign and malignant. The former do not affect the general health of the patient in any notable degree, and may only be dangerous mainly by reason of pressure on vital structure or the secondary causes (haemorrhage, suppuration, softening), to which they are sometimes liable. Malignant tumors disturb the general health from

the first and in addition tend to recur after removal and spread to other parts, by metastasis or direct invasion, secondary particles carried through the circulation or the lymphatic channels.

These two groups of tumors have each their own peculiarities, which can be summed up as follows: Benign.—Have a capsule; are homologous; usually poor in blood vessels; no metastasis; generally multiple; may grow very large; ulcer if exists only superficially in the skin-lipoma; do not recur; never kill except mechanically; no cachexia. Malignant.—Have no capsule; are heterologous; usually soft and juicy; rich in blood vessels; give metastasis; generally single primarily except spindle-cell sarcoma which, may be multiple; primary always small; secondary may grow large; often ulcerates tumors itself being involved do recur; kill by destruction of tissue and metastasis; show cachexia—progressive emaciation from lack of nutrition. The malignant tumors are represented by the various forms of cancer and sarcomas; all the rest are benign, with the exception of the myxoma, which may be either.

CLASSIFICATION BY SHAPE.

1. Uniform swelling: Goitre lymphoma Glioma.
2. Nodes growing centrally (all the benign grow below the surface): Fibroma, myoma, lipoma, chondroma, neuroma, etc.
3. Nodes by infiltration sending roots: All malignant tumors, sarcoma and cancer.
4. Desquamation: Ichthyesis.
5. Flat tabular swelling: Benign angioma, lymphoma, kilioid, malignant epithelioma, squamous and cylindrical.
6. Hemispherical growth: Multiple fibroma and spindle-cell sarcoma.
7. Tuber: Chondroma, osteoma, chondroma.
8. Papilla: Horns, corns, chondyloma (pointed).
9. Fungus rich in color and not covered by skin: Telangiastatic sarcoma and carcinoma.
10. Polyp or pedunculated growth: Myoma, soft fibroma, adenoma.

11. Deudritic or cauliflower growth: Papilloma if growing only upward; epitheloma if growing both upward and inward.

12. Cysts: Hollow tumors.

III. *Histogenetic classification*:

A. Histioid tumors. *a.* Perfect: Fibroma, repeating the structure of fibrous tissue; myoma, mucous tissue; lipoma, adipose tissue; osteochondroma, callus tissue; osteoma, bone; myoma, muscle; neurooma, nerve; angioma, blood vessels; lymphangioma, lymph vessels. *b.* Imperfect: All the forms of sarcoma and glioma.

The perfect histoid tumors are formed and grow after the type of various forms of connective-tissue substances, or repeat one of the elementary tissues, while the imperfect histoid tumors are formed after the type of embryonal connective tissue.

B. Organoid tumors. *a.* Perfect: Adenoma, repeating the structure of a gland; papilloma, repeating the structure of the skin or mucous membrane. *b.* Imperfect: epithelioma, repeating imperfectly the structure of the skin or mucous membrane; carcinoma (glandular), repeating imperfectly the structure of a gland.

The perfect organoid tumors are formed, then, after the type of a typical epithelial structure, while the imperfect are a typical structure.

C. Paratoid tumors are represented only by dermoid cysts and made up of a number of separate tissues, as fat, cartilage, bone, teeth, or hair, enveloped in a capsule.

In the short time allotted to me I can hardly more than enumerate some of the more important tumors, giving a very brief outline of some of them.

Fibroma: Connective-tissue tumor, after the type of fibrous tissue. Common in domestic animals, particularly the dog and horse; may grow in any part of the body where connective tissue is found; usually single, but may be multiple; two varieties, hard and soft. Microscopy: Hard fibroma has many fibres running in various directions, few cells and blood vessels; soft fibroma has many cells and fewer fibres, which are loosely

arranged. The fibroma grows, generally, as a nodule, but occasionally may be pedunculated. Neoplasm: Fibromas may be found also in old scars, sometimes following castration or as keloid fibroma of the skin. The fibroma combines readily with the myoma, more seldom with myxoma, lipoma-sarcoma. The ordinary shoe-boil becomes eventually a fibromyoma. Degenerative processes are very common in fibromas: calcareous, mucoid fatty, and telangiectatic.

Myxoma: Connective-tissue tumors after the type of mucous tissue. Is not as common in animals as in man. A typical myxoma is soft and often hangs on a narrow pedicle, as a polyp from mucous membrane. They occur also in connection with the mammary gland, brain, and spinal cord. Microscopically they consist of stellate or spindle-shaped connective-tissue cells, which lie within a homogeneous, somewhat refractive or gelatinous matrix. Combines with fibroma and lipoma, but is also one of the invariable constituents of mixed tumors of the parotid gland or the testicles, and from the various tissues of the combination called adeno-fibromyxochondro-carcinomatosis.

"WHAT I SAW AT OMAHA."

BY DR. J. J. DRASKY, CRETE, NEB.

Read before the Nebraska Veterinary Medical Association, February 21, 1899.

I have been a member of the Nebraska Veterinary Medical Association since 1896. My reason for joining was one that brought fifty per cent. of my colleagues within our circle. The only point we had in view in joining was some form of legislation benefiting and elevating the standard of the veterinarian in the State of Nebraska. With hard work and the co-operation of the entire society we are about to take our first step by having a bill passed providing for a State veterinarian. While it may not help us all directly, we each and every one will be benefited in the end. The field is now open for operation; we are now given the opportunity wherein we can prove to the people of Nebraska that we are worthy of their confidence and

protection. If the bill passes, and I believe it will, the State veterinarian and his assistants will be in a position to show to the people of Nebraska the difference between a qualified practitioner and the empiric ; and, therefore, if it so happens that we hereafter may ask for some legislation along our line, the task of securing it will be insignificant in comparison with our past struggles. But I have found that there are other benefits to be derived from active membership in the association, and of far greater importance than this. Dr. S. Stewart in a paper read before the Missouri Valley Veterinary Medical Association, October 5th, expresses my feelings far better than I myself would be able to do. In the association we meet our colleagues, exchange with them our views on operations ; if downhearted are encouraged, and we leave for home happy, contented, refreshed and prepared for another struggle. If we have failed in the treatment of a certain disease, we are either able to determine the cause or learn that others are not much better off than we are. We read our papers and they are thoroughly discussed in a friendly manner ; each and every one feeling perfectly at home, and I believe I am right when I say that there is not a member in our Nebraska Veterinary Association who would hesitate to speak of his non-success. Yes, I am convinced that more of us usually bring the most difficult cases, the cases which we cannot handle, before the association, and the discussion created thereby benefit not only the individual, but the entire body. We have started in small, our membership insignificant ; but while we are small in number we are united ; each and every member is always ready to put his shoulder to the wheel and make this association as good as the best. To illustrate the strength of union and harmony, I may only point to our meeting at Omaha. The task of entertaining the American Veterinary Medical Association was an enormous one ; still, we succeeded far beyond our expectations, everything being very satisfactory, with the exception of one portion of the clinics, and the task of describing this has been assigned to me.

The clinics, as you know, are a new departure in our veteri-

nary association, and in new features mistakes are easily made ; possibly not by the Entertainment Committee, but, as was the case at Omaha, through the ignorance and previousness of some one else. I was asked by Dr. A. T. Peters to secure a ridgling horse, which I did. It was taken to Omaha by Dr. Peters with other patients and was to have been operated on by Dr. J. W. Adams, but through some cause this gentleman was not present, and Dr. S. E. Cosford was asked to operate. There are none among us who will deny the skill of Dr. Cosford, for his long experience and good success speak for themselves ; but as he has been inspecting stock for the last four or five years, and, therefore, retired from active practice, it may be the cause of his partial failure, not on account of his inability, but by allowing himself to be misled by one whose conduct was anything but complimentary to the veterinary profession. I hope that none will take offense at what I may say, for it is not my desire to be sarcastic, to ridicule or to speak in an unfriendly manner, but if inappropriate conduct of any of us at the veterinary association meetings be overlooked, the result may be disastrous to the association. It is not from choice that I have written this paper, but it seems that in this case I am a subject of circumstances. As I have already stated, this horse was in my care. I was acquainted with the history of the case, which I gave at the clinic. As the operation caused a great deal of excitement I was requested by a great number of my colleagues to report the result thereof. For the benefit of those who were not present, I shall attempt to describe the proceedings in detail.

The subject, a two-year-old colt, was brought out, cast and secured. Dr. Cosford, observing the necessary antiseptic precautions, washed and cleansed the scrotum with an antiseptic solution and cleansed his hands thoroughly, cut through the common integument, exposing the external ring, then following the inguinal canal, punctured the peritoneum about the internal ring and proceeded to secure the cord. So far the operation was performed in a very professional manner. Evidently he accomplished his desires and in a short time succeeded in

bringing to light something that to most of us appeared to be the cord; but through some then unknown cause the testicle failed to follow. Dr. Cosford worked very hard and he should be complimented on his level head and steady nerve. When repeated attempts to bring the testicle forward failed, he asked Dr. Vincent, of Shenandoah, Iowa, who stood immediately behind him, if that was not the cord. Dr. Vincent in reply said: "No, any one that has ever had the cord in his hand should know better," or something to that effect. Dr. Cosford at once released his hold upon the object in question and proceeded once more to explore the "lower regions," but, in spite of it all, the same portion of the horse's anatomy was brought to light. After repeated failures, Dr. Cosford requested Dr. Vincent to put his hand in there and ascertain whether or not that was the cord. Dr. Vincent at once proceeded. After throwing off his coat and rolling up his sleeves, he took possession of the subject. Passing his hand into the canal he uttered these words: "In the first place, you are not working with the proper hand. You should go in with the right hand for the right seed and the left hand for the left seed." Next he said: "You have torn such a hole in here that when this horse gets up the guts will come down. The guts are now staring me in the face." Of course such professional and scientific expressions took the breath out of the entire assembly. Some of the boys' hats blew off as the result of this unexpected gush of gas. He then continued and secured what looked to all of us like the cord, applied the ecraseur and removed the structure in question, claiming it to be the testicle. He proceeded at once to give us a free lecture on ridgling castration, telling us of the great, great many he had operated on, and the very, very insignificant losses he had met with. I shall let you imagine the effect that all of this had on the clinic class. The majority of us turned our backs upon the orator, and some of us proceeded at once to dissect the so-called testicle and found it to be nothing but a section of the spermatic cord. We, knowing that the testicle was not removed, knew that it must still be in the abdominal cavity.

Many of my colleagues came to me and expressed the desire to kill the subject, hold a post-mortem examination and prove the gentleman a prevaricator of the truth. To this I would not consent, but I gave them all my word of honor that if the horse died, I would hold a post-mortem examination and publish the results.

The horse was led into his stall and taken care of by myself in person for the two days that I remained in Omaha. Three or four days after the operation he was shipped with the other subjects operated upon to the experiment station at Lincoln, and in vain did Dr. Peters and his assistants strive to save the life of the patient. Six days after he arrived at the experiment station, I received a message from Dr. Peters stating that my horse had succumbed and asked me if I wished to be present at the post-mortem examination. I at once answered requesting Dr. Peters not to do anything until I came. On arriving at the State Farm I found the carcass and we at once proceeded with the post-mortem, which revealed inflammation of the entire abdominal cavity, enteritis, peritonitis, etc., considerable pus around the inguinal glands, a great deal of effusion and pus in the abdominal cavity, extensive adhesions, the peritoneum and intestines in all stages of inflammation, and the desired organ, the testicle, we found free in the epigastric region. The testicle being abnormal we could readily see why the operators were unable to bring it to light by simple traction on the cord, it being considerably larger than the slit in the peritoneum. The serous covering was the only one which appeared normal. Inside of this we found a semi-osseous covering, rendering the organ unyielding and very hard. On cutting through this we found the hard shell to contain a great deal of fluid, which exuded at once. As cystic testicles are not uncommon, a trocar should be at hand at these operations and the fluid drawn, which would cause the testicle to collapse. Still, if this had been done, the consistency of the shell in this case would not have allowed the testicle to collapse. I have brought this specimen with me, thinking that it will interest many.

Gentlemen, I sincerely hope that this paper will be interpreted by the profession in the spirit in which I have written it. In it I reprimand Dr. Vincent, not because of any personal grudge or dislike, but for the good of the profession. I am convinced that Dr. Vincent's conduct was due to ignorance rather than to a desire to injure anyone; neither do I believe he wished to deceive us when he stated that he had removed the testicle. But in reprimanding him we warn those who may through malice or otherwise take an opportunity thus offered to belittle their colleagues, thus injuring the meetings, from the fact that many of those well informed lack courage and fluency of speech, and if by some individual possessed with the gift of gab he be handicapped, the profession is robbed in this way of valuable ideas and possibly of a desirable member. If he be allowed to go on in this way at our association meetings, what will he do in active practice? How is he likely to talk to his clients, and what will his conduct be toward his competitors? I beg pardon of Dr. Vincent that it was his misfortune to be made an example of, and I assure him that I feel as friendly towards him to-day as I do to any member of the profession. I have not chosen this paper, but, as I have said before, it was assigned to me for the reason that I was responsible for the subject operated upon. I naturally became more interested than others and our officers were justified in assigning me this paper.

AZOTURIA IN THE DOG.

BY ROBERT DICKSON, D. V. S., NEW YORK CITY.

Read before the May meeting of the Veterinary Medical Association of New York County.

The following two cases which came to me for treatment during the past few months being both new and novel to me, I thought it might be interesting to the members of the society to hear the symptoms shown, treatment prescribed, and the termination of each, as I have never heard or read of any case in canine practice displaying the symptoms shown in these cases.

The May number of last year's REVIEW quotes a paper read before the Wisconsin Association of Veterinary Graduates at Milwaukee on "Azoturia in the Dog," by Dr. Leach, and as there is such a difference between his experience and mine, I hope there will be a chance for us all to learn something.

He states, "it is characterized by tonic and clonic spasms of the pelvic and lumbar muscles, also those of the pectoral region." He also states that the primary cause is dietetic and that dogs are very liable to it, as they are very much abused for want of exercise in the proper manner; that owners also err in the way of feeding, not paying enough attention to the condition and vocation of the animals, and in that way leaving the dog more subject to the disease. Then he goes on and gives a brief description of the symptoms he found in two cases, one dog being attacked in the right pelvic limb, the other losing the power of both pelvic limbs, urine high colored with nitrogen and albumin slightly present. Then he states they yield very easily to treatment, quickly recovering, with very little danger of their terminating fatally. *How* near he is right or wrong it is for you gentlemen to determine, or whether he has had a true case of azoturia.

The following is my experience: Feb. 15th I was called to see a black spaniel, 9 years old, weighing 21 pounds, very fat and well cared for. He had an attack of nephritis last fall, and one attack a year ago last fall. He was well fed from the kitchen, getting a taste of everything he would eat. It was a standing rule for him to be exercised twice a day, morning and night; as he was taken from the house this day, the house being situated at Park Avenue and 74th Street, he played, ran, jumped, and appeared to feel as good as usual, until he reached 5th Avenue and 75th Street, when he was suddenly taken with a faulty gait, reeling and staggering, and finally falling down, becoming unable to walk. He was carried home and I was sent for. On arriving at the house I found him lying on his left side. He appeared bright and showed no symptoms of pain, but could not stand up. Thinking it a case of acute

paralysis from some old kidney trouble, I prescribed accordingly. Gave cathartic, but to my surprise the next day found he had died at 9 o'clock, after 23 hours of sickness.

My second case was a black-and-tan common-bred dog, two years and six months old, weighing 40 pounds. He had a short, thick body, and was very fat. He was kept in the house and store as a night watch-dog, but was never tied up; was allowed to run in the streets a few minutes three times a day on dry days, on wet days was put in a small covered yard. He was very choice and dainty in his eating, would not eat anything but choice beef and chicken, and was fed three times a day, as regular as his owner ate himself.

On March 10th his appetite became capricious and diminished, increased thirst but diminished urination, and complete constipation. Prescribed a cathartic and sanmetto, giving two drams every three hours. On March 11th was very unsteady upon his feet, and when compelled to walk would reel from side to side, and show symptoms of acute vertigo. When lying, appeared stupid or semi-conscious; no faeces or urine voided during the day. A partial paralysis now appeared in the posterior quarters with a twitching of the superficial voluntary muscles. Countenance became anxious, patient moaning almost constantly. The catheter was introduced during the evening. Urine evacuated was of a dark brownish black color. The lumbar muscles now became hard, rigid and prominent, and appetite impaired. Temperature 103° , pulse 98, respiration 25.

On March 12th, complete paralysis of back loins and posterior extremities, the muscles being hard, prominent and painful upon manipulation, the bowels operating freely due to the cathartic administered, urine retained, catheter introduced and urine found to be slightly changed in color. During the day patient showed colicky pains at frequent intervals, the paroxysm coming on every 4 or 5 minutes. Temperature 103.2° , pulse 96, respiration 28.

On March 13th no apparent change in condition, appetite failing, bowels operating, sat up and passed urine without aid,

which was of lighter color. Temperature 102° , pulse 92, respiration 20. Symptoms about the same as previous day, colic pains having subsided. On March 14th he died in the morning, before I arrived, struggling in his agony.

In conclusion, I would like the opinion of the members present. Did my patient have azoturia, that mysterious disease of the horse, or was it acute or chronic nephritis, meningitis, spinal meningitis, cystitis, or some as yet unidentified disease?

PROGNOSIS.

BY J. C. MICHENER, V. S., COLMAR, PA.

Read before the Annual Meeting of the Pennsylvania State Veterinary Medical Association, March 8th, 1899.

The elements of success in the practice of our profession are threefold.

First and most important is actual knowledge pertaining to all branches of the art. Second, executive ability or the faculty of applying knowledge. Third, prognosis or the ability to forecast the results of the diseases and conditions met in practice.

Skill and discretion in the use of the tongue is largely the making of a practitioner. We must talk. Our patients are property and aside from the attachment the owner has for his faithful animals our services become a matter of dollars and cents. To experienced practitioners I need not portray the close questioning to which we are subjected and scarce need tell that the client's estimate of us will be determined by the verification of our answers.

To the young man I would say, the safest plan (for both old and young) is to prognosticate as little as possible.

Direct questions must be answered or we will be in the position of the simple boy whose mother had ordered to keep his mouth shut on a particular occasion. Being questioned, and making no reply, one guest remarked to another, "I believe the boy is simple," when he blubbered out, "Mother! mother! they found me out and I did not say a word."

Much skill can be exercised in making provisos for the unforeseen circumstances that may arise. If the lame horse does not strain himself over again, the sick one take fresh cold, the surgical case contract blood-poisoning or develop lock-jaw, we can hope for favorable results. "Look wise, but say little." Grave looks, a shake of the head, upon taking the pulse or temperature, frequent visits, anxious inquiry when the attendant is seen before the patient, all tend to make it a serious case, assuage grief when terminating fatally and augmenting the rejoicing when the case recovers.

I am talking particularly to the young men and can assure them that these little artifices are justifiable in self-protection under the difficult circumstances.

The human practitioner's powers of forecast are not so severely tested. He is not required to answer so definitely. Simply is it a serious case, giving him a chance to err upon the safe side.

But the veterinarian is asked bluntly, can you pull him through? which must be answered by a yes or no, or a hopeful or doubtful. If no, or doubtful, your services are discredited and likely discarded at once. If an affirmative answer is followed by a negative result, you are branded a humbug.

How is the practitioner to best prepare himself for this difficult part of his work? A close study of the natural course of diseases, their period of duration, the weakness or idiosyncrasy of the patient and the hygienic conditions under which he must be treated, together with the history, the stage in which he finds him, the extent of pathological change, all of which coupled with great discretion will enable him to answer the unavoidable questions in such way as to convince his patron that he understands his business. Not only this, but the knowledge just enumerated is essential to avoid being robbed of the fruits of your skill and care. Many funny things occur in practice. Dr. Brown has been treating a spavin for several weeks. The benefits are not apparent to the owner and he is dismissed and Jones employed. Ankylosis is about being completed, Jones

has the toe shortened, gives a little judicious exercise and monkey's treatment. Lo! the horse soon goes sound and Jones scores a mighty victory. Brown has his revenge. Jones has treated a case of strangles until the suppurative stage is near, gets the bounce and Brown shows them how to clean them out. He is usually the lucky man who is called near the close of endemic. The cases are less severe and show his superior treatment. Typhoid influenza and parturient apoplexy often give a man much unearned glory. We are frequently asked for an opinion upon some abnormal condition, especially when the animal is about being sold. Does or will it disqualify the animal? Other opinions will be freely proffered and sought after, and your prognosis in the case surely put to the test. Many cases will not admit of a positive prediction and many reputations have been shattered by making positive assertions. Still worse when a man is off in his diagnosis pronouncing a case of bruised or punctured frog, severe hip or shoulder lameness. A broken tooth or foreign body fast in the mouth, a case of choking distemper, and there are lots of similar mistakes that amount almost to professional suicide.

REPORTS OF CASES.

"Careful observation makes a skillful practitioner, but his skill dies with him. By recording his observations, he adds to the knowledge of his profession, and assists by his facts in building up the solid edifice of pathological science."

A COSTLY EXPERIENCE.

By W. H. TURNER, V. S., North Amherst, Ohio.

On December 5th we were called to a neighboring town to attend a cow said to be suffering from indigestion. On reaching the farm we found a basement stable containing about twenty head of cattle; and among them a Jersey cow, very emaciated, discharging a watery secretion quite freely from both nostrils and eyes. Thermometer gave a temperature of 103, pulse was 72, and respirations 14. Persistent grating of the teeth and complete loss of appetite, but no tympany present. My diagnosis was that we thought the trouble catarrhal influenza and treated symptoms. Next day we were again called, being

notified that three or four others were sick. On arrival we found a grade heifer dead. She had been taken sick last evening and died before morning. Her stall was the next one to our patient of yesterday, which was in much the same condition as when we first saw her.

There were three others more or less ailing, presenting symptoms similar to the Jersey cow, with occasional switching of the tail, stamping of hind feet and lying down and getting up; or, in other words, showing colicky pains, with hurried respiration, blueish color of the gums and a peculiar smell to the breath. We now became alarmed, thinking we had something of a very serious nature to deal with, and requested that another veterinarian be called in council.

We began an investigation of surroundings, etc., and soon discovered a cause. About a week or more before our visit the owner had thought to save himself some considerable work, and so had built a water trough, about four inches deep, and one foot wide, which passed through the mangers of the whole string of cattle, so that they could be watered without leaving their stalls. This trough had been made of unplanned green plank, not matched, but simply spiked together, and was probably seventy-five feet or more in length. Very naturally it leaked, and in order to stop this, he had used five pounds of white lead in coating the inside at the joints and bottom. You can imagine how much would adhere to the saw marks of unplanned lumber. He had then watered the cattle from the trough every day, even to the same day he painted it.

We now diagnosed lead poisoning, discontinued the use of the trough, and prescribed magnesia sulphate, sulphuric acid and iodide of potassium. On examining the herd we found elevation of temperature, 102 to 104, in every one except one. So we treated the whole herd. One died the first night, one in three days, one in six days and one was killed.

Dr. Gribble, of Elyria, saw the cattle with me.

SORE MOUTH IN CATTLE.

By H. FULSTOW, V. S., Norwalk, Ohio.

During the month of October I was called to see a cow for a Mr. Smith that would not eat. Upon my arrival I found a nice big cow, stiff all over, looking as gaunt as a greyhound, nose poked out and smacking her lips, with abundant saliva dribbling from the mouth. Pulse slightly increased, temperature 104° , mammary glands hot and upon trying to milk her strings

of pus came away; bowels constipated, urine scanty. I examined her mouth and found the dental pad had ulcerated patches on it and a very foetid smell; mouth was very hot and tender; also some ulcers around the gums of lower jaw and some of the incisors very loose; one I picked right out. The owner put a piece of pumpkin back in the mouth and she ate it greedily. As this was the first case of the kind I had met I was guarded in my diagnosis, thinking I might have a case of contagious aphtha or foot-and-mouth disease, as everybody in the old country calls it. I gave the cow sulphate soda, \mathfrak{Z} viii; zingiberis, \mathfrak{Z} ii, in solution, at one dose, and left one-half pound more of the same to give her a tablespoonful three times daily dissolved in hot water and put into her feed. Feed consisted of scalded oats and bran, very sloppy. Swabbed her mouth with some of the following: Tannic acid, borax, and glycerine in aqueous solution, and ordered it swabbed three or four times daily. Cow did nicely and was well in about ten days. The next day I got two more cases about twenty miles in another direction, and for about four weeks I treated twenty-seven cases in all, with symptoms about the same, with a few variations; one or two, I think, had small ulcers form on leg and a few had ulcers in cleft and around coronet of feet.

Now, can any of my fellow practitioners tell me what caused it? Was it due to some poisonous weed or some toxin poisoning? I will say that I did not have a new case after the first frost came and all the cows treated were at pasture. I heard of several cows that just starved to death before they found out what was the trouble.

WHAT BECAME OF THE STICK?

By J. F. DE VINE, D. V. S., Rhinebeck, N. Y.

On January 23d I was called to Mr. D.'s stock farm and on my arrival found the subject to be a ewe. The herdsman gave the following history: Ewe lambed last night; was bright and ate well this morning; fed cut turnips and meal to flock at noon; after feeding her, and while feeding the others, she began to jump about violently in pen; found she had piece of turnip in her throat. Immediately he picked up a piece of bale-stick, about $1\frac{1}{2}$ feet in length, smoothed it with a knife and wrapped cloth on one end and oiled it and then proceeded to dislodge the turnip. After passing the stick down about one foot, the animal made a bound in the air, breaking the stick close to the hand. He showed me the stick, or what remained of it, and it

was about $1\frac{1}{2}$ inches in circumference. The ewe was lying on her side and resting easily with the exception of slightly labored respirations. I manipulated the oesophagus, but could find no stick. I then decided to cut down on the oesophagus at base of neck, knowing my fingers were pretty long and thinking if lodged in thoracic region, I might grasp it. This was without success; even an eight-inch sound met with no obstructions. I then closed the wound, ordered sloppy diet and left, thinking what best to do next. On the morning of the 24th she ate a little and seemed somewhat brighter. She improved in appetite daily, convalescing completely in a week, and to-day is as well and fat as any of the flock and has reared her two lambs.

What I would like to know is, Where is the stick? What became of it? Should I have performed rumenotomy immediately, and is it practicable in sheep?

A CASE OF POST-PARTUM PARALYSIS.

By J. F. DE VINE, Rhinebeck, N. Y.

On April 3d, about 3 P. M., Mr. C. came to my office saying he had a Jersey heifer which he thought very much of and would like me to come and see right away.

On my arrival I found her in a recumbent position. He gave the following history: On the morning of April 1st she gave birth to a nice large calf, and on the evening of the 2d she went down; she was raised several times by attendants, but only to fall again, pulse, respirations, temperature, appetite and excretions all being normal. I then made a manual examination of the vagina, os, and uterus, finding all normal with the exception of retention of the placenta, which I removed. I then cleansed the uterus with an antiseptic solution. The only medication she received was fld. ext. nucis vomica, 3 ii, four times daily.

Leaving orders to keep a good litter of straw under her and to have her turned occasionally, I left, saying I would call again in the morning.

On the morning of April 4th, the attendant told me the animal tried to rise about 7 P. M. of the 3d, and finally succeeded, but in a few minutes went down again. I found the animal up and eating, temperature, respirations, etc., normal. She made a complete recovery, not causing even a suppression of the lacteal secretion.

Was this not a true case of post-partum paralysis? and did the retention of the placenta have any bearing on the cause?

EXTRACTS FROM EXCHANGES.

GERMAN REVIEW.

BY PROF. OLOF SCHWARZKOPF, Flushing, N. Y.

LUGOL'S SOLUTION IN SEPTIC METRITIS.—Veterinarian Simon, Havixluck, recommends Lugol's solution (iodine, 1 part; iodide of potass., 5 parts; aquæ destill., 100 parts), for purposes of irrigation of the uterus in septic metritis. He maintains that the common antiseptics, carbolic acid, lysol, creolin, are irritating to the uterus and produce violent straining in both cows and mares, sometimes resulting in prolapsus *vaginæ*. The most interesting of his cases is that of a mare, in which the placenta, which was retained after birth, was manually removed by an empiric, resulting in septic metritis. S. remarks here that in his experience the manual removal of the placenta in a mare is commonly fatal, but that it is most successfully accomplished by the introduction of large quantities of water. The mare exhibited high fever (104° F.), pulse 75, conjunctiva yellowish-red, abdomen greatly drawn up with colicky pains, groaning and rolling. During manual exploration of the vagina and uterus the mare strained heavily, ejecting a reddish-brown fluid of foetid odor. With the internal application of bicarbon. of soda and iodide of potass., S. irrigated the uterus with Lugol's solution, 4 tablespoonfuls to 1 quart of water. On the first day this irrigation was made twice, on the succeeding three days only once a day. In 4 days the mare appeared as cured, and S. considers it a rapid recovery.—(*Berlir. Thier. Wochensch.*)

PILOCARPINE IN ASCITES.—Dr. A. Schmidt-Halle reports a case of severe ascites in a poodle-dog, which he considered hopeless. The abdomen of the dog was enormously distended and entirely incompressible. As the owner insisted upon treatment, S. opened the abdominal cavity with a fine trocar, through which was emptied about five litres of a watery fluid. The internal treatment consisted of digitalis and tinc. colchic. Within four days the dog was brought again and this time 4 litres of fluid extracted. S. then prescribed pilocarpine hydrochlorate, 0.3; aq. destil., 150.0; one tablespoonful a day. After three days the owner reported that the abdomen had not filled again, but that the dog was spitting constantly. After eight days the owner brought the dog and reported that its keeper had given

two tablespoonfuls of the medicine instead of one, hoping to accelerate the recovery. The dog had manifested no serious effects, but appeared as usual and has remained so. One result of the pilocarpine treatment consisted in alopecia of all four legs, but a new growth of hair soon started, although being of a lighter color than originally.—(*Berlin. Thier. Wochensch.*)

ENGLISH REVIEW.

OPERATION FOR STONE IN THE BITCH [*By A. J. Sewell, M. R. C. V. S.*].—The author after giving the symptoms that accompany vesical calculus and making some remarks on lithotomy and lithotripsy, relates a case in which he operated on a small toy terrier bitch, over 13 years of age, resorting to the pubic operation, and in which he removed two calculi, one as large as a small walnut, the other smaller and flat on one side, as if it had rubbed against the first. Complete recovery occurred in three weeks—a kind of vesical fistula interfering with the healing process for some time. The operation was carried out under the usual aseptic conditions. In conclusion Mr. S. says: “Lithotripsy should always be performed, when possible, instead of lithotomy, being a much safer operation, except, of course, when the stone is quite small, when it may be removed entire with a small pair of forceps. A great drawback of lithotripsy is, that when the calculus is large, it takes a long time to remove all the fragments.”—(*Vet. Record.*)

CANINE INFLUENZA, OR WHAT? [*By H. Gray, M. R. C. V. S.*].—Influenza is admitted to affect dogs by French and English writers, but the affection observed by the author is more of the nature of “grave infectious stomatitis.” In the early part of 1898 many cases were brought to him, as many as 15 in a day and often 50 a week. The symptoms were shivering, loss of appetite, depression, vomiting, difficulty or inability to sleep, buccal mucous membrane covered with thick soapy mucus, also on gums, tongue, soft palate and pharynx. Tip of the tongue gangrenous, with a tendency to expand. The whole region of the mouth was of dark reddish appearance. Mouth had odor of sour ensilage. Rapid fatal pneumonia occurred in many cases. Sometimes there was diarrhoea, sometimes none. Slight cases were subject to relapse. Recovery occurred in strong dogs, but in old, heart or kidney lesions followed by death were frequent. Convalescence long. The treatment consisted in tonics, quinine and hydroch. acid, tinct. cinchona, amputation of gangrenous

tissues and iodine dressing; bismuth, ice and soda, brandy, milk, essence of meat.—(*Vet. Record.*)

SEQUEL TO BLISTERING [*By T. H. Gibbings.*].—A mare, lame forward, after several ordinary forms of treatment, was blistered around the coronet and after a week or ten days she traveled sound. Some time later, at the request of the owner, a second series of blisters was applied, and after three days showed all the symptoms of blood poisoning. Her head and limbs were swollen, circumscribed swellings appeared all over her body, mostly in dependent positions, ecchymosis of the membranes of the eye and nose, with profuse bloody discharge; great difficulty of breathing, and loss of appetite. The swellings were well fomented, and belladonna liniment applied and iodine given internally. This was done for several days. The breathing was relieved and appetite returned, but many troublesome sores of the head, knees, hocks and the heels occurred, which were treated by antiseptic dressings. Ultimately the mare recovered, but had very ugly cicatrices in various parts of the body remain.—(*Vet. Record.*)

INTRA-ABDOMINAL SWELLING ASSOCIATED WITH A SMALL SCIRRHOUS CORD [*By F. T. Harvey, F. R. C. V. S.*].—A four-year-old gelding presented the following symptoms: Occasionally slight colic, frequent micturition. Standing with legs wide apart, he is stiff in his gait. When the legs are in position the back seems arched. Appetite bad. Temperature 103° ; pulse and respiration not disturbed. Rectal examination revealed a large swelling on the right side, greatly diminishing the looseness of the rectum, and apparently extending away into right flank. At one point it is distinctly nodular. Pain was evinced on pressure. The right cord is indurated. About the size of a man's thumb inferiorly, it becomes very large as high up as it can be felt. There was discharging; no oedema had ever occurred. The animal received a treatment of iodide of potassium, three drachms a day for four weeks and reduced gradually to smaller doses. Recovery was complete in about six weeks.—(*Vet. Record.*)

IMPERFORATE OS.—Mr. P. C. Howard, M. R. C. V. S., related a case in a three-year-old heifer, which he considers as quite rare, and is answered by Mr. G. H. Williams, who calls his attention to eight somewhat similar cases recorded in the *Journal of Comparative Pathology*, and mentions seven cases which were brought under his observation. In his case, Mr. Howard relates the symptoms as follows: The heifer strains violently

and persistently ; drops of urine drip from the vulva. Examined by rectum, a balloon-like mass is detected, apparently occupying the whole pelvic cavity. On attempting to examine her vagina, he found that there is no passage to the uterus, and felt a tough, tense membrane pressing against his fingers, about 10 inches from the vulva. He used considerable pressure, which the heifer resented, and eventually with a blunt probe burst the membrane. A clear syrupy fluid, slightly tinged at first with blood, flowed away to the amount of $3\frac{1}{2}$ gallons. The animal recovered rapidly her normal condition.—(*Vet. Record.*)

HYDROPS UTERI IN A HEIFER [*By P. J. Simpson*].—The interest of this case consists in the amount of fluid that was extracted, and which is estimated by the author at fifteen gallons. The clear fluid that escaped from the dropsical organs continued to flow for over an hour and a half.—(*Vet. Record.*)

A NEW AND EFFECTIVE DOG MUZZLE.

City veterinarians especially will be glad to welcome the invention of a muzzle for dogs that is simple, practical and effectual. While muzzles have been used universally from time immemorial, we have never seen one that is so thoroughly

adapted to the various uses of the veterinarian in practice as the one herewith illustrated. For operations in the office, or to patients who have received surgical or other dressings it is superior to anything we have tried. At the April meeting of the Veterinary Medical Association of New York County, Secretary Ellis, who has been using them for some time, was good enough to present us with one, and so valuable did it prove that it has

been adopted as a well-nigh indispensable addition to our canine paraphernalia. That others might become thoroughly acquainted with it, we importuned Dr. Ellis to write a description of the little invention, and are pleased to affix his letter :

Dear Dr. Bell :

Assuming that by this time you have become enthusiastic over the advantages of the muzzle that I presented you with at our last meeting, I



herewith mail you a photograph of the same, which I had taken at the manufacturer's request; and he authorizes me to say that he can furnish mail orders with perfect satisfaction, by observance of the following rules: In ordering for any size dog up to a bull terrier, order by numbers as follows: No. O, suitable for black-and-tans and other small *toy dogs*. No. I, suitable for fox terriers, Irish terriers, pugs, etc. No. II, suitable for bull terriers, collies, etc. Beyond that size, send neck measurement close up to back of head, distance from back of head to point of nose, and circumference of nose. In *all cases*, whether ordering by number or special measurement state breed of dog, and whether large or small and coarse or fine, of that particular breed. He quotes prices as follows, in fine black leather: No. O, \$1.25; No. I, \$1.50; No. II, \$1.75, and special measurements, from \$2 up, according to size. In tan color, 25 cents extra on each muzzle. Address all orders to "The American Box Muzzle Co.," No. 453 West 150th Street, Borough of Manhattan, New York City, enclosing P. O. order for amount of price, or checks, if in New York or vicinity.

I have been using the "American box muzzle" for several years in my office and general practice, and have found it to be a wonderful addition to an equipment for the successful treatment and handling of dogs, surgically and otherwise. The size which I find comes most often into requisition is No. I, such as *you* have, and by having in addition No. II in my office, I find myself ready to handle safely and comfortably almost any size dogs that may come in. I find two great advantages from the use of this muzzle, aside from its general usefulness, in that it will not offend the most fastidious dog owner, when they see it on, and see their dog's nostrils appear naturally and free at the front aperture, as the universal tape often *does*, because, they tell us, "you have to tie it so tight, Doctor," and it insures us more efficient help from the person holding the dog, when his mouth is perceived to be thus covered. This latter advantage applies more especially in the cases we dress on our rounds, away from our offices, where we have not our regular assistants to call upon, not even our well-scared office boy, but instead have got to depend upon the mistress of the dog, her maid, or some one equally inexperienced or timid; and one or two of the muzzles can readily be carried in the carriage along with the other articles.

And in addition to these surgical cases where we use the muzzle ourselves for a few moments at a time in applying dressing, it fills an excellent place in the treatment of exaggerated skin diseases, in preventing the dog from licking off any application that we may desire to use. In such cases I prescribe or order a muzzle, letting my client procure it, and when through with the case he hangs it up amongst his dog's belongings for future use on similar occasions. By adhering to that rule, we will not find ourselves without a muzzle in our office some day when we desire to use it in a hurry. A veterinarian once getting to use them will be surprised how many he prescribes or orders in the course of a year, if his dog practice is at all extensive, which indicates how much we need the article.

Very truly yours,

ROBERT W. ELLIS.

(From the *Breeders' Gazette*.)

BREEDING CITY HORSES.

An Illinois reader submits the following:

"In your issue just at hand you tell us the kind of horses to breed for city uses five years hence; now will you please go a little further and tell us how to produce them?"

This is "a horse of another color." It is comparatively easy to indicate the types of harness horses most in demand, but opinion varies widely as to how they can best be produced. Let us get a clear understanding of the problem by defining the types of horses under consideration. By general usage among the best-informed, city horses for pleasure purposes are divided into two general classes—light-harness and heavy-harness. This is not an especially distinct classification, but convenient and reasonably accurate. A light-harness horse is a roadster or buggy horse. He wears a breast-collar (Dutch collar) harness made of light leather throughout, and the bridle to this harness has an overdraw check, with or without blinders. By heavy harness is not meant draft or truck harness, but the heavy-strapped collar and hame harness used for traps, gigs, broughams, victorias, coaches and all the various other types of vehicles built in much heavier style than road wagons, top buggies and phætons. With this harness side-checks or bearing reins are used. The difference is not merely in the collars, but also in the size of the straps and weight of the harness throughout. Horses large enough and rotund enough to fit these heavier vehicles and harness are called heavy-harness horses. They are also termed carriage horses, coach horses and high-steppers.

Let us first consider the light-harness horse. The cheapest horse on the market (aside from "plugs") is the ordinary driver—the buggy horse. This type without speed and with only a small amount of good looks has been produced in such vast numbers that they are a drug on the market. They are useful for buggy purposes. They will draw vehicles (even as heavy as a light surrey) at six to eight miles an hour and do excellent service as family horses in towns or villages, and are worth much more in actual service than their present price, but the city will not pay good prices for them. They lack two qualities of a high-priced horse of their class—beauty of form and speed. In breeding the light-harness horse farmers should therefore aim at more than an ordinary driver. They should seek shapeliness and speed—not two-minute speed, but something

around three or four-minute speed to a buggy or road wagon. We would not advise trying for such a horse unless the mare is trotting-bred and fine. The stallion cannot do it all. Having a well-bred, handsome mare breed her to the handsomest and speediest trotter you can find, and the produce will almost certainly be a roadster that will bring a good price. If the colt happens to come a misfit—if he does not measure up to the standard of sire and dam—you will have a common driver, worth very little. That is the danger in breeding for high-class light-harness horses. But do not think you can get a light roadster by breeding to anything but a high-class trotter. There is no other horse comparable to the American trotter in producing light roadsters. The Russians have some handsome-bloodlike and game trotters, but they are scarce in this country and should not be selected as against the type that we have evolved here.

When we come to producing the heavy-harness horse—the coacher—the farmer has many prescriptions thrust upon him. There is a large constituency of trotting-horse breeders who insist that the trotter, bred for generations for the sole purpose of speed, is the best sire of coachers. If he were, never a hoof of foreign-bred coach horses would have been landed on our shores. It was the crying need for something which we did not possess that brought the coachers and the hackneys across the water. The man who breeds to a trotter with the expectation of getting a coach horse must look well to his material. His mare must be decidedly on the coach type and have ample "spread"; that is, she must not be slab-sided, with cat hams. The stallion must be one of the rare types among trotters. They are occasionally found; they would have been more plentiful but for the craze for extreme speed. He must stand 15.3 to 16.2, be full-made in barrel and quarters, with ample length of neck and as much finish as possible.

But it is to his action that special attention must be paid. It is the bare fact that the trotter has been bred for generations to exactly the action that is not wanted in a carriage horse, namely, a long, sweeping, extended stride, with a straddle behind. This is one great difficulty in breeding carriage horses from trotters. When you do get knee action you will generally find very poor hock action and a straddle-gate behind. A horse thus gaited is only half a high-stepper. Avoid wide and dragging hock action at all times. The clean, attractive, trappy Morgan action is what is wanted. It is a good seller.

There are those who insist that farmers shall breed to the

trotter because he is an American production. They insist that they shall boycott the "foreigners" because of their birth. Of course this is merely the narrow view that is inspired by "vested rights." Ownership or interest has much to do with it. Horse-breeding is a matter of the pocket-book, not "patriotism." The farmer should found his operations on this proposition.

Another class of teachers insists on the use of the thoroughbred stallion on draft mares for the production of carriage horses. We warn our readers against it. Let those who can afford to draw blanks from this lottery experiment to their heart's content with it. The temper of the thoroughbred and his stiff-kneed, daisy-cutting action are all against such a system of breeding. Moreover, we earnestly warn against draft blood in the mare when trying for carriage horses. We need not rethresh this old straw; our views on this subject have been repeatedly emphasized.

Turning to the stallions that have been especially bred for the purpose of getting carriage horses we find the French and German Coachers, the Hackneys, and the Cleveland Bays. All have their advocates and all have demonstrated their value when properly mated. Much "trash" has come across under the names mentioned and it is no better than our own home-bred trash. It is all off the same piece and good stuff to let alone. If there is anything in heredity, if there is aught in inherited instincts and tendencies, if blood in breeding is not a mere name, then the surest and most sensible way of producing coach horses is to resort to coach-horse blood. Men do not gather figs from thistles. Every living creature has been brought forth after its kind since the Creation, and will continue to be. The principle of heredity was fixed at the Creation. Do men breed to dairy sires when they want beef beasts? Do men breed to bull-terriers when they want bird dogs? Why, therefore, should a farmer breed to a 2:30 trotter or draft horse when he wants a coacher? Master-breeders have spent their lives in evolving the foreign-bred sires of heavy-harness horses. They have fixed those types; is there any reason why we should not avail ourselves of the fruits of their lifetime of endeavor? We have amply demonstrated the ability of the coachers and the Hackney to reproduce themselves. Many misfits have resulted from injudicious and indiscriminate patronage of such sires, but that was not the fault of the stallions. Properly mated *The Gazette* believes that the best results in breeding for carriage or coach horses will be attained when the breeds

evolved for such purpose are patronized. To conclude otherwise is to reject the foundation principle of all live-stock improvement.

CORRESPONDENCE.

PRACTICAL HINTS ON SCHMIDT'S TREATMENT OF PARTURIENT PARESIS OF COWS.

Editors American Veterinary Review:

DEAR SIRS:—The season of milk-fever being again at hand, I have of late received numerous letters asking information in regard to the iodide of potassium treatment. While I am greatly pleased to thus hear from so many former pupils, friends and even strangers, yet I find myself unable to reply to all of these letters in the manner I would like to do or as the questioners have a right to expect. I take, therefore, this means to convey the desired information.

1. The infusion-apparatus as described in the December (1898) issue of the REVIEW, page 583, can, of course, be constructed at home. Yet there seem to be doubts as to the quality of the rubber-tube, the kind of milking-tube, etc. In order to be practical I have consulted with Messrs. J. Reynders & Co., 303 Fourth Avenue, New York City, and they have constructed a very useful apparatus of good material for \$1.25, which they are ready to ship on receipt of order.

2. The dose of iodide of potassium is 7 to 10 grammes=105 to 150 grains, according to size and weight of cow; one-half this dose may be repeated within eight hours if no effect is visible from the first infusion.

3. The preparation of the solution is of the greatest importance. The idea is to make the solution aseptic, *i. e.*, free from any germs by which the udder may become infected internally, which surely will result in mastitis (garget). Usually there is no difficulty in being supplied with clean boiling water in a house kitchen. I allow the boiled water to stand for a time to settle, then slowly pour it through filter-paper into a pint bottle (salt-mouth) containing the iodide of potassium. The bottle has been sterilized at home and closed with disinfected cotton. As soon as the solution has cooled to body temperature (100 F.) it is ready for infusion. In the meantime I have the udder thoroughly milked, washed with soap and water, and disinfect it myself, especially the teats. For this purpose I prefer creolin (Pear-

son), although lysol was originally recommended, and the more common antiseptics may be efficient enough when these are not at hand. I place the udder for disinfection and infusion upon a white oil-cloth, because I have experienced that cows sometimes suddenly react during the infusion with a hind foot, throwing up dust, which must be guarded against most scrupulously. Then I introduce the milking-tube into one teat after another, while an assistant is pouring the iodide solution into the funnel, dividing it equally into four parts for the four teats. I also have him cover the funnel with filter-paper to prevent contamination of its contents. The massage of the udder during and after infusion I perform now myself, because I consider it quite important for proper distribution of the medicine.

I have ceased to apply any other internal remedy, and fare just as well, although in certain cases caffein may be indicated and should then be given. This successful treatment is a great pleasure to me, and the only trouble is that I cannot get enough cases to treat, while formerly I dreaded them. There is no doubt that all who apply this treatment intelligently will have the same good results, while an occasional failure should not discourage. Finally I wish to advise all colleagues to keep short records of treatment for future statistical material.

OLOF SCHWARZKOPF.

PROMOTING THE PRIVATE APPLICATION OF THE TUBERCULIN TEST.

The following typewritten letter has been sent to many veterinarians in New York State:

NEW YORK STATE BOARD OF HEALTH.

TUBERCULOSIS COMMITTEE.

SYRACUSE, N. Y., May 15, 1899.

DEAR DOCTOR:—We mail you under separate cover, a few circulars of information and instruction regarding bovine tuberculosis, which we hope you will distribute to cattle owners who are your friends and patrons. We are making an effort to encourage the more general private application of the tuberculin test. Much practical experience in its use, as well as the testimony of others having larger experience, makes us firm believers in its value to dairymen, not only in purifying their herds, but also of pecuniary advantage to them in making it possible for them to weed out tuberculous cattle early in the course of the disease before they have become such a prolific source of infection as to contaminate an entire herd, resulting in great loss to the owner. Besides this there is a further advantage greatly

appreciated by the more intelligent consumers of dairy products, that of being enabled to furnish them with pure products, guaranteed the fruit of healthy stock.

We cannot see how in the light of present knowledge, cattle-men will continue to purchase stock to replenish or enlarge their herds, without first taking the precaution to apply the tuberculin test. We believe the time is coming when every cattle owner will have his own cattle tested, and never buy cattle without submitting them to this test, but this condition will not be realized until veterinarians more generally appreciate its importance and advocate its use.

Cattle-owners naturally look to their veterinarians in whom they have confidence, for instruction and advice regarding their stock. It should be the duty of veterinarians to instruct and advise them regarding stock and stable sanitation, as well as the means and methods for preventing the development and spread of infectious diseases, and we hope soon to see more work done in this line by individual veterinarians and veterinary societies.

To encourage the private application of the tuberculin test, we will furnish for a time, to any or all cattle-owners applying for it, sufficient tuberculin to test their herds, provided they will require the veterinarians making the tests to furnish us with a complete report of their work on blanks furnished by us. We should be pleased to have you promptly report to us, any cattle you may know or suspect have tuberculosis, as we desire in all cases, to take such action as will prevent further spread of infection to cattle or man.

Yours very respectfully,

F. W. SMITH, M. D.,
Sec'y Tuberculosis Committee.

DR. PERLEY'S CASE OF EXTRA-UTERINE PREGNANCY.

ITHACA, N. Y., May 15, 1899.

Editors American Veterinary Review:

DEAR SIRS:—I am interested in Dr. Perley's case report of "Extra-uterine Pregnancy," in the May issue of your journal. I do not follow his description. His statements are paradoxical. As I read the description, it seems that on October 16, the mare had labor pains and expelled the foetal membranes, and that on the following day the "os" was "dilated" and uterus "was pretty well contracted," while on the floor of the latter a completely healed cicatrix was recognizable.

Are we to understand that the foetus dropped through the uterus at least $6\frac{1}{2}$ months prior to this date (he states it was of normal volume) and all connection between uterus and foetus ceased, while the membranes retained their vitality and the uterus its volume without foetal relations?

And did the foetus, without uterine connection, proceed to develop a new sac about it and the broken umbilical vessels become newly attached? It would add greatly to the interest of the case if Dr. Perley could tell us if the foetal membranes expelled October 16 belonged to the extra-uterine foetus or to an interloper, the result of a second impregnation which might have occurred several months prior to the death of the mare, and the expulsion of a small foetus might have escaped notice, especially if the mare was allowed to run at pasture or pigs were admitted to the premises where the patient was kept. Certainly there should be some amendment to the apparently paradoxical relations between the placenta within the uterus and the foetus without—the uterus being wholly closed. Truly yours,

W. L. WILLIAMS.

SOCIETY MEETINGS.

MISSOURI VALLEY VETERINARY MEDICAL ASSOCIATION.

(Continued from page 150.)

Dr. James S. Kelly, of St. Joseph, Mo., was next called upon, and responded by reading the following paper, entitled

TUBERCULOSIS IN SWINE.

In the preparation of this paper regarding the general characteristics of tuberculosis in swine, it is not my purpose to introduce new discoveries, neither will I elaborate on the general pathological changes produced by the presence of the bacillus. But I hope to plainly state the facts as they have occurred to me during my limited experience and to define the macroscopical appearances as seen upon the killing floors, together with whatever I can gather from sources regarding the prevalence and nature of the disease.

We as sanitarians or preservers of the public health, being compensated from the coffers of a generous people who in a measure place their lives as well as the lives of their children confidingly in our hands, cannot deal too rigidly with this most dreaded disease and when confronted with a condition of so grave importance should not give it passing consideration.

Owing to the virulence of the germ of tuberculosis and the susceptibility of the human body to its ravages, and knowing as we do that large quantities of flesh are devoured in a semi-cooked condition, it places the disease of tuberculosis paramount to all others for our most careful observation.

Being the possessor of a ravenous appetite the hog gathers his food from various channels and eats freely and apparently with relish the excrement of all domestic animals. He accepts with apparent gratitude contaminated food which is refused by his co-partners. He is fed upon the refuse of the culinary department, he is the adjunct of economy to all creameries and cheese factories, he receives his portion from the dairy and is allowed the privilege of dining upon the milk from the cow supposedly suffering from "garget" or "weed," which is in the majority of cases tuberculosis. He thrives and lays on fat when allowed to devour the unfortunate ones of his own species, as well as those of the equine or bovine tribe, and it is an undisputed fact that many animals which have succumbed to divers diseases are drawn to the swine feeding lots in preference to a burial, and some unscrupulous dealers count heavily to gain on such fat-producing elements as a dead horse or beef. Thus it is that our swine have great range for infection and owing to the fact that they are usually slaughtered from nine months to two years of age, the disease seldom reaches that stage where emaciation is a marked symptom. In this condition of apparent health together, with the rapidity with which the swine pass through our large packing plants, it requires the most careful observation and the faithful attention of the inspector to detect its presence. A number of cases will present lesions quite obscure, while the majority show well-marked and distinctively well-formed alterations. Tuberculosis in swine, like that of other animals, may be found in any organ or tissue of the body, but, unlike that of cattle, the spleen seems to become one of the primary seats of affection and appears to supply a fruitful soil for its development. The liver, lungs, lymphatics, serous membranes, kidneys and bone lend support largely to its development, and owing to the fact that the seat of infection is largely through the ingesta, we find the abdominal viscera to be quite often affected and sometimes find tubercular ulcers situated along the lining of the intestines and tubercular products in a stage of development along the submucous or muscular coats.

The spleen upon microscopical examination presents broad, flattened nodules, yellow in color, gradually blending into the

normal color of the organ itself. The nodules usually appear freely over the surface of the spleen, are somewhat elevated in the centre, and measure from 1-16 to 3-4 inch in diameter. On section they appear as tough elastic or fibrous tissue containing more or less of a yellowish product near their centre, which may be softened into purulent matter or may be charged with a gritty product of a calcareous nature. On section of the entire organ we find deeply embedded in the parenchyma rounded well-formed nodules of a soft consistency, free in number, and resembling cheesy deposits. The tissue of the spleen seems normal in consistency, color and texture, but the organ itself is usually very much enlarged.

The liver, somewhat enlarged by the process of chronic inflammation during the nodular development, may be studded over its entire surface with small yellowish tubercles usually appearing in the type of miliary tuberculosis. I have noticed those cases where the liver was completely loaded with tubercular product and not only did they appear on the surface but were found in large numbers in the substance of the gland, often in such quantities as to destroy, by crowding, large areas of gland tissue and consequently greatly impair the healthy function of the organ. However, in well marked generalized cases of tuberculosis we do not always find this organ to be the seat of extensive disease.

The presence of tubercular products in the lymphatic glands is manifest even in the earliest stage of the disease and with progression the glands undergo all the changes peculiar to its development; often the disease is confined to the gland structure alone and so long as it remains confined to such glands it does little or no injury to the animal. In some cases, however, the gland undergoes a complete change. Its parenchyma gives way to the formation of a calcareous tumor. In such cases also little harm can arise so long as the condition remains local. Still, in other cases the gland undergoes a retrograde process and becomes broken down and necrotic, such process usually beginning in the centre of the gland extends toward the periphery. This broken down product is carried from the gland by the efferent vessels and poured into the blood stream and thus becomes the primary focus for the generalized contamination of the system.

Tuberculosis spreads from the primary focus in a variety of ways, viz. : by the lymphatic system, by the blood stream, by contiguity of tissue. From the primary focus we experience

the giving off of tubercular matter which enters the lymphatic channel and is carried supported by the lymph fluid and enveloped in the lymph corpuscles to the adjacent members of the lymphatic system. The chain of the glands *en route* of the lymph stream become each in turn subjected to the infection. Many of course under favorable circumstances become affected, giving rise to the formation of new foci. The blood stream spreads the disease from the primary focus and receives the infection, which it carries in two ways, first, the lymph fluid charged with the germ of tuberculosis is poured into the general circulation through the thoracic duct; secondly, the walls of the capillaries adjacent to the primary focus become infiltrated with tubercular products and the bacillus enters the blood stream direct. The generalization, the extent, and the acuteness of the disease depend largely upon the supply of tubercular matter from the focus. Tuberculosis spreads also by the contiguity of tissue; this is exemplified in the manner by which the nodules appear upon the serous membranes and by the infiltration of glands such as we see in tuberculosis of the liver. The germs carried by the lymph or blood stream find lodgment in some tissue or organ favorable to their development, its presence excites inflammation, the germ multiplies and becomes the centre of infection, the leucocytes enter for the purpose of eliminating the system of the irritant. They take up the poison and enter the lymph channels only to die, leaving their load of germs or spores to become the centre of another tubercle. The bacillus having no power of movement within itself can spread only by the aid of one or all of the above methods, and in these advanced cases we can usually find the presence of nodules on various parts of the body, in fact it may appear upon any tissue or organ. The lymphatics most commonly affected in the cases I have examined were the maxillary, guttural, pharyngeal, pectoral, sublumbar, and those of the visceral organs. By means of contiguity of tissue, I have found the tonsils and pharynx to be extensively studded with tubercular products in cases which were not generalized.

While in a number of cases we find the lungs the seat of extensive tuberculosis and often find the parieties of the chest cavity to be well covered with miliary tuberculosis, I am inclined to believe that the disease rarely enters the system by means of respiration. When we consider that swine produce no sputa and that they are usually slaughtered before the disease reaches an advanced stage and knowing that in the early

stages the excretions are not extensively charged with infectious germs, we become convinced that the dissemination of the disease through the medium of respiration is very rare. In those cases where the disease is manifest in the chest cavity, we find it usually in the miliary form, due possibly to the fact that the disease has not reached its more advanced stage wherein the nodules become conglomerated and unite to form larger masses. In the lung substance we find small necrotic patches of tubercular products, which often in the process of development become converted into purulent matter, coalescing with surrounding necrotic patches to form large tubercular abscesses destroying more or less of the lung tissue.

When the germs of tuberculosis are introduced into the system by means of the ingesta they become transmitted through the intestinal walls in the absorbent process, large numbers of adult bacilli, no doubt, are destroyed by the secretions of the stomach, leaving only the spores to escape into the bowels for absorption. This absorption takes place by means of the lacteals or venous circulation of the portal system. Immediately upon the advent of the germs a conflict ensues between the invaders and the phagocytes of the intestinal apparatus. The microphages, which comprise the white globules of the blood and a part of the lymphatic corpuscles, leave their vessels by diapedesis, and by virtue of their amoeboid movements station themselves throughout the invaded tissue and begin active battle with the enemy. They seize the germs, englobulate them and attempt to kill, digest or break them up. This destructive or digestive action is usually performed in some of the deeper lymphatic organs where the phagocytes receive strength and support by the peculiar function of the lymph glands. Once the invaders become englobulated the phagocytes make their course directly to these deeper organs to complete the destruction, which is done by the action of their secretions. During this transportation the secretions of the microbe often become too severe for the phagocytes, causing them to become sick, weakened, and relaxed, and finally succumb to the action of the microbic secretion, the protoplasm loses its continuity and dissolves itself, thereby liberating the invading germs. This dissolution of the phagocytes often takes place in the interior of glands, whence they went to conclude the conflict. The liberating of the germ in a new field makes possible a new seat of infection, when the liberated germs have yet sufficient vitality to grow, and when the weakened or dead microphage is not

englobulated, together with its aggressor, by the larger yet less ambitious helper, the macrophage. These macrophages are large, almost indolent cells, with little power of movement, and stationed about the system where most needed to assist in the phagocytary protection. Their action in englobulating and digesting poisonous germs is similar to that of the microphage; they are composed of fixed connective tissue cells, endothelial cells of vessels, cells of the spleen, bone marrow, in Peyer's patches, and pulmonary alveoli.

We are aware that germs of tuberculosis are often introduced into the system which find no lodgment there. Again the system may be contaminated and extensively affected from one introduction, and that introduction may be trivial. There are those cases that develop with great rapidity, while others will remain dormant, apparently gaining but little upon the animal economy. The susceptibility of the system, the extent and rapidity of development, depend upon the virulence of the infection, the extent or supply of tubercular matter, the phagocytory aptitude of the cells. The latter varies greatly in different animals, and can be modified and reduced in all by poor sanitary surroundings and by disease. Once the animal becomes weakened or debilitated by disease or poor hygienic surroundings, the germs which may be in a dormant or inactive state take advantage of the weakened phagocytory elements and become inure and active, thus overpowering a system which under favorable surroundings enjoyed a certain degree of immunity.

The bacilli of tuberculosis having been absorbed with the ingesta and entered into active conflict with the phagocytes, become scattered in the deep organs throughout the abdominal cavity. Phagocytes charged with irritating properties usually make their way into the lymph channels and are carried with the lymph stream to the various organs. Many, no doubt, are carried to the liver by the portal circulation, thus giving rise to a possible infection of this organ in the primary stage. Even though they reach the liver they are not always permitted to establish an infection, for they are usually transported to nearby lymphatics for the purpose of continuing the conflict; still this is not always the case, the germs may become liberated in the liver and gain a foothold, thereby producing a minute, circumscribed, chronic inflammation by which process the tubercular nodule is developed, growing rich in giant cells with the presence of more or less bacilli.

The spleen, apparently one of the primary seats of infection

in swine tuberculosis, possibly acquires its infection through its office as a phagocytory protector and a receptacle for the storing away of white globules. Venous blood leaving the spleen is vastly more rich in white globules than is arterial blood entering that organ. The spleen is possessed of the double function of destroying worn-out and degenerated globules and building up, strengthening, protecting, and dealing out white globules to the circulatory fluid as they are needed. This organ while having the power to build up and protect white globules, is known also to disintegrate sick and enfeebled ones. Now that the phagocytes being charged with germs of tuberculosis have entered this organ to receive strength and protection, and being sick and enfeebled they may become disintegrated and devoured by the great amœboid cells, their bacillus may be liberated, making infection of this organ possible.

Rarely if ever is the practicing veterinarian called upon to treat tuberculosis and for that reason little is known of its ante-mortem appearances. However, we can expect the presence of such lesions as are commonly seen in other animals affected with the same malady, such as falling off in flesh, slightly elevated temperature, staggering gait, possibly labored breathing and an impaired appetite.

Tuberculosis in swine seems to be of rare occurrence, especially in the Western States. In these localities swine are fed largely on cereals and are not exposed so much to contagion as swine raised in the Eastern States, where large numbers are fed annually from the waste of dairies, creameries, and cheese factories. Still, I am of the opinion that the disease is far more prevalent in the West than is generally supposed. I have found tuberculosis in a number of hogs which came from our Western States, and am satisfied that the percentage affected is more liberal than it should be.

I have never had the pleasure of experimenting by inoculation. However, the experience of others has taught us that the disease is easily transmitted to other animals, that the poisonous germs from swine affected with tuberculosis is exceedingly virulent, that the disease becomes generalized much earlier and runs a more rapid course, due possibly to the rapid assimilation and building up of tissue, and that the dissemination of the germs in the muscular tissue exceeds that of other animals. The liquor sanguinis pressed from the muscular tissue of a hog affected with tuberculosis will produce fatal tuberculosis when injected into a guinea pig.

The conclusions which I have drawn from my experience are, first: that the hog is the most susceptible of all our meat producing animals; that owing to the age at which he is slaughtered he seldom reaches the extreme advanced stages and is scarcely ever emaciated to a marked degree; that, together with the rapidity of slaughter, and the location of the diagnostic tubercles, it is liable to escape the eye of the most careful inspector; that, owing to the generality of the disease and the dissemination of poison in the muscular tissue, the meat should be considered noxious; that, owing to the amount of heat which the spores will resist, and knowing that large quantities of meat are consumed while yet insufficiently cooked to destroy these spores, and knowing that they are within themselves exceedingly dangerous to the human body, I would recommend the condemnation and destruction of all swine affected with tuberculosis.

DISCUSSION OF DR. KELLY'S PAPER.

Dr. Stewart: According to the arrangements of the programme, it falls to me to open the discussion on the paper just read. I desire to compliment the essayist upon this most excellent presentation of a very interesting subject. The essayist has followed out the disease processes so completely that there is little room for discussion along that line. However, I may be able to offer a few remarks that will stimulate thought to others and which they will offer in this discussion. The paper deals very largely with phagocytosis, and as I understand the theory it is a correct presentation of the subject. There are some points, however, which I think it would be valuable for us to consider. There is one feature of this theory of phagocytosis which the essayist did not touch upon, and which to me is a most interesting one. I refer to the problem of the manner or process by which the bacillus tuberculosis finds entrance into the solid tissues when introduced into the respiratory or alimentary tracts. It seems that ordinarily the epithelial structures are capable of resisting the invasion unless there be an abrasion of the superficial layers. I have no recollection that bacteriologists claim that the tubercle bacillus has motor power or has the power of migration. There is a theory that the bacillus, probably through a substance which it secretes, is capable of irritating the mucous surfaces and stimulating the phagocyte to reach through the superficial structures and grapple with the bacillus in an endeavor to effect its destruction, and upon withdrawal of the phagocyte the bacillus is carried within the solid tissues.

The essayist held that it was only when lymph-glands had undergone necrotic destruction that the bacilli were carried forward toward the general circulation by enclosing phagocytes. I am inclined to believe phagocytes are capable of and doubtless do escape from tubercular lymph-glands before extensive necrotic changes occur, and that the invasion is usually beyond the point showing gross necrotic lesions. This seems to be true in cases of tubercular invasion of serous membranes. Apparently the tubercular development is in a like stage of progress over large areas of the serous surfaces. If the organism was not carried beyond the point where necrotic changes were plainly visible, then we would find that, beginning with the point of invasion, the changes would be more complete and more aged than in other parts of the affected membrane. If I remember correctly, it is not often that we can see the various stages of development so plainly marked, showing the gradual advance from one point and spread out over the serous surfaces. It is probably true that in most cases in swine the infection occurs through the alimentary tract rather than through the respiratory passages, as evidenced by the lesions found in the lungs being apparently of more recent development than those which are found in organs adjacent to the intestinal canal. I was interested in the statement that swine produce no sputa. Persons who have to do with handling swine are well aware that it is difficult to find a bunch of hogs which have been moved to the slaughter-house pens, which will not contain a number that do not cough more or less violently when made to move about briskly. The mucous membrane lining the respiratory tract of swine certainly secretes mucous just the same as does like structures in other animals, and I am satisfied that I have observed swine expectorate or throw out mucous when coughing—and I see no reason why the bacilli of tuberculosis might not escape from the lungs of swine affected with this disease by means of sputa.

I fully agree with the essayist, that if tuberculosis is found in swine that the flesh should be condemned and not used for food purposes. There are a number of gentlemen present who have had large experience in post-mortem examinations of swine, who doubtless can contribute materially to this discussion, and I trust they will do so.

Dr. McCurdy: I would like to ask Dr. Kelly if he has noticed what seems to me to be a peculiarity of tuberculosis of the pleura in swine, which is the absence of adhesion between

the two pleural surfaces, visceral and parietal, whereas adhesions are quite common in pleural tuberculosis in cattle.

Dr. Kelly: I would say that I have never noticed a case of adhesion of the lung to the chest wall in case of tuberculosis in swine. The tubercular nodules seem to be beneath the parietal pleura, causing a bulging at places where the tubercles developed. The tubercles are usually flattened. I have never noticed them to be pedunculated as in the ox.

Dr. McCurdy: I think this point is very important. I have seen a good many cases where the lung is adherent to the thoracic wall and the lung is removed with difficulty, but in tuberculosis the lung is not adherent; it comes out *en masse*.

Dr. Forbes: I think this association is indebted to Dr. Kelly in bringing this subject to our notice. The prevalence of tuberculosis in swine is becoming so frequent that it forces itself upon our attention. We are also indebted to him for the manner in which he has brought it to notice, having presented it in such a graphic and interesting way. He has brought the attention of the meeting to the fact that the spleen seems to be a primary seat of the disease. The spleen being an accessory organ of the digestive system, and the abdominal form of tuberculosis being the most frequent in swine, it is easy to account for this. It has been noticed in tuberculosis in cattle, that the spleen is seldom, if ever affected, the nodules sometimes found on the surface being confined to the capsule, and do not penetrate the spleen tissue. The difference in the anatomical conformation of the two animals would seem to account for this. In cattle, the spleen is attached to the greater curvature of the rumen, and not in close proximity to the true stomach, while in hogs it is almost in direct contact with the true stomach. In speaking of phagocytosis, it was stated by the essayist that the phagocytes seized hold of the bacilli, and immediately transported them to the deeper organs, to complete their destruction, the spleen being one of the principal organs. During this transportation the bacillus may overcome the phagocyte, the latter becomes sick, from its effort to digest the microbe, or from the effect of the microbic secretion upon it, and when it reaches the spleen the englobed microbe will be able to liberate itself, and proceed to form the nodules characteristic of it. Another point which interested me was the point brought out by Dr. Stewart, regarding the entrance of the bacillus into the tissues. Dr. Kelly, I think, stated in his paper that the phagocytes were of two kinds, microphages and macrophages, the

former being white blood corpuscles and the latter fixed connective tissue cells. It is possible that the bacilli may be carried by the microphages to the capillaries of the internal organs, where they find conditions favoring their entrance into the tissues. We know that the leucocytes are gifted with movement, evidenced in the process of diapedesis, and one theory of this process is, that the leucocytes penetrate between the cells, or that they dissolve the cell cement, causing the endothelial cells to contract, allowing the corpuscles to pass through readily, and we could suppose that bacilli could be carried through in this way. In the exudate of inflammation we often find large numbers of red globules, which, like the tubercle bacillus, are not gifted with movement, but have escaped through the openings made by the leucocytes. Of course, this is only a theory, and is thrown out in the hope that it will result in stimulating others to an expression of opinion.

Dr. Stewart: The last speaker has shown a way by which the micro-organism may be transported from the blood stream into the cellular tissues, he leaves unexplained how the micro-organism gets from a mucous surface into the deeper tissues. The problem of the frequent development of tuberculosis in the structure of the spleen in swine is an interesting one. The essayist has said that the spleen is a source of regeneration of microphages and it would seem that if a microphage, a sick microphage, succeeded in conveying his burden to the spleen he might get sufficient help to destroy it. I trust that the essayist in his concluding remarks will discuss that point.

Dr. Kelly: While I claim that the spleen has the double function of recuperating disabled microphages as well as developing new ones, it is probable that sick ones or those which are overcome by the bacilli are disintegrated, liberating the bacilli, and it is in this way they secure a lodgment in the spleen.

Dr. Forbes: Regarding the point of Dr. Stewart, as to how bacilli gain entrance to the tissues from an epithelial surface, I would say, that the epithelial cells of a mucous surface, being able to act as phagocytes, could take up the organism, and in the fight which ensues, the cell may be overcome and the microbe get deeper into the tissues.

Dr. Cock: There might be one question arise as to how the bacillus enters the mucous membrane. Under certain conditions we may find mucous from the lungs of the human which contain bacilli, while they are not affected with the disease at all. In order for the germs to enter there must be a lowering

of the vitality of the mucous membrane. I believe that the way the bacillus enters the mucous membrane, it throws out a substance or ptomaine which destroys the connecting substance between the cells and in that way finds passage through the mucous membrane.

Dr. Kelly: I had always thought that the germs or spores of tuberculosis were passed through the intestinal mucous membrane by osmosis, during the process of absorption, in this way gaining entrance to the lacteals and are carried to the lymph channels. It is generally understood that the disease spreads, in one way, by contiguity of tissues; after gaining entrance to a tissue or organism it may spread from the centre by its own growth or prolongation.

Dr. Stewart: Before closing this subject it might not be amiss to suggest that the organism being a vegetable may vegetate and extend prolongation through the superficial structures of the mucous membrane and in this way find entrance into the deeper tissues. Some writers have held that the spores were small enough to be carried in during the process of osmosis.

(*To be continued.*)

VETERINARY MEDICAL ASSOCIATION OF NEW YORK COUNTY.

The regular monthly meeting was called to order by President Robertson, at the New York Academy of Medicine, 17 West 43d Street, on May 3d, at 8 o'clock P. M.

The following members were present at roll-call: Drs. Bell, Clayton, Dickson, Ellis, Foy, Gill, Goubeaud, Keller, MacKellar, O'Shea and Robertson. Visitors, Drs. L. Nicolas, N. Reichman and G. B. Morse.

Dr. Dickson read a very interesting paper on "Azoturia in the Dog,"* which was freely discussed.

Dr. Bell: I was very anxious to hear Dr. Dickson's paper on "Azoturia in the Dog," as a short time ago, in answering an inquiry from Dr. Dickson in relation to this condition, I stated that I had had a case that day. The symptoms observed by me, however, were more like those described by Dr. Leech than those observed by Dr. Dickson. My case was that of a fox terrier, abnormally fat; had eaten breakfast, felt good, ran out and suddenly became paralyzed in the posterior limbs. He sat up in front, but could not use hind legs to hold up his weight.

* Published elsewhere in this issue.

I gave calomel, which produced catharsis, and the case terminated favorably. I have had another case since in a dachshund; symptoms similar, treatment the same, recovery. If it is not azoturia, what is it?

Dr. Dickson: I have often had cases in which they would drag the hind legs for two or three weeks, but yield to treatment, but they were somehow different from the cases described in my paper.

Dr. Bell: Did you make an analysis of the urine?

Dr. Dickson: No.

Dr. Robertson: Did you observe any appearance of jaundice?

Dr. Dickson: Yes, a slight trace of it in the second dog. I did not look close enough at the first one to observe it.

Dr. Robertson: The discoloration on this blotter from the sample of urine you furnished us, looks as though it might be due to bile.

Dr. Gill: One or two points in Dr. Dickson's paper bear out his diagnosis, viz.: the hardness and swelling of the gluteal muscles, with the characteristic appearance of urine, the fact that it occurred in plethoric animals, with lack of exercise, etc. I think the coloring matter in this sample of urine resembles haemoglobin rather than bile, and, with Dr. Dickson's consent, I will have it tested at the Board of Health Laboratory and report the result of the test at the next meeting.

Dr. Goubeaud reported a similar case to Dr. Dickson's in a fox terrier let out to urinate, came in stiff and trembling, muscles hard, and could not stand; was put on strychnine and calomel; died. Post-mortem revealed nothing wrong with intestinal tract.

Dr. Gill gave a discourse on "Some Important Veterinary Events of Next September." This subject was fully discussed.

Moved and seconded, that Drs. Dickson and Gill receive a vote of thanks for their papers. Carried.

Judiciary Committee reported progress.

Moved by Dr. Clayton that the Secretary be authorized to issue certificates to members who are shown to be square on the books and pay an additional one dollar to cover expenses of engrossing, mailing, etc., instead of five dollars as heretofore. Seconded. Carried.

The Secretary was so authorized by the President.

ROBERT W. ELLIS, D. V. S., *Secretary*.

WISCONSIN SOCIETY OF VETERINARY GRADUATES.

The annual meeting of the society was held February 9th, 1899, at Madison, Wis., in the rooms of the State Agricultural Society.

The meeting was called to order at 2 p. m. by the President, Dr. B. L. Clark, Monticello.

Present: Drs. B. L. Clark, Monticello; W. G. Clark, Marinette; H. P. Clute, Marinette, Wis.; L. A. Wright, Columbus; Chas. Schmitt, Dodgeville; J. F. Roub, Monroe; G. Ed. Leech, Milwaukee; D. Roberts, Waukesha; R. S. Heer, Plattville; A. H. Hartwig, Watertown, and E. L. Morgenroth, Boltonville. Visitor, Dr. E. R. Flack, Manitowoc.

The minutes of the last regular meeting were read and approved. The Secretary's report was read and accepted. The Treasurer's report was read and accepted.

Under the head of unfinished business the application of Dr. J. P. Laws for honorary membership was taken up. Moved by Dr. Clute and seconded by Dr. Hartwig, that the application be granted. Carried.

The charges preferred against Dr. R. A. Higgins and Jno. T. Unerth for a violation of the code of ethics by holding office in a live stock insurance company and giving said company free veterinary services were taken up and discussed by Drs. Hartwig, Leech, Clark, Schmitt and Roberts. Moved and seconded that R. A. Higgins and Jno. T. Unerth be expelled from the association. Carried.

The application for membership of Dr. E. R. Flack was presented and referred to the Board of Censors. They reporting favorably, the application was balloted on, and Dr. Flack was declared elected to membership. On motion a recess was taken for ten minutes.

When called to order the subject of veterinary legislation was taken up. The bill presented at the last session of the legislature was read by the Secretary. Discussed by Drs. Hartwig, Leech, Clute, W. G. Clark, Schmitt, Flack and Roberts.

Moved by Dr. Clark, and seconded by Dr. Leech, that the President appoint a committee of three to draw up an amendment to the present veterinary law providing a penalty for violation of the same. Carried. The President appointed as a committee Drs. Clute, Leech and Roberts.

Reading of Essays.—Dr. Chas. Schmitt read a paper on "Parturient Apoplexy," in which he discussed the different pathological conditions in detail and reported several cases and

methods of treatment employed. Discussed by Drs. Heer, Roub, Clute, Hartwig, Roberts and Leech.

On motion the society adjourned to meet at 7.30 p. m.

Evening Session.—The meeting was called to order at 7.30 by the President. The discussion of parturient apoplexy was resumed by Drs. Roub, Clute, Roberts and Hartwig. On motion, the essayist was excused and a vote of thanks tendered. Carried.

Dr. R. S. Heer reported a case of fracture of the os pedis and sloughing of the hoof, and after a time sloughing of the hoofs of the other three feet, probably due to laminitis from standing so long. On motion, a vote of thanks was tendered Dr. Heer for his communication.

The place of holding the semi-annual meeting was discussed. On motion it was decided to hold it in Milwaukee.

On motion it was decided that the President and Secretary appoint one other member as a committee of arrangement for the semi-annual meeting.

The election of officers for the ensuing year resulted as follows: President, D. Roberts, Waukesha; Vice-president, J. F. Roub, Monroe; Secretary, W. G. Clark, Marinette; Treasurer, Chas. Schmitt, Dodgeville. Censors—Drs. A. H. Hartwig, Watertown; H. P. Clute, Marinette, and R. S. Heer, Platteville.

It was moved and seconded that the members make a free-will offering of papers for the semi-annual meeting. Carried.

Dr. Clute volunteered to read a paper on "Tuberculosis," Dr. Hartwig on "Parturient Apoplexy"; also Drs. Morgenroth, Schmitt and Wright, subjects to be chosen later.

On motion, Dr. Wright was tendered a vote of thanks for his services as President.

The Secretary was instructed to mail a postal card with each programme that the committee on arrangements might know how large an attendance was to be expected.

On motion the society adjourned to meet in Milwaukee in September, subject to the call of the President, Secretary and Dr. Leech.

W. G. CLARK, M. D. C., *Secretary.*

AMERICAN VETERINARY MEDICAL ASSOCIATION.

The Committee of Arrangements of the American Veterinary Medical Association are holding meetings and perfecting the details of the "Veterinary Jubilee." Each sub-committee is up with its work, and there is every promise that those who

visit New York next September will be repaid tenfold in profit and pleasure. The place for holding the convention was the chief subject of consideration at the last meeting, and it was the general opinion of the members that the Academy of Medicine, the home of the County Society, would be the most central and convenient to the other theatres of action, being but a short walk from the American Horse Exchange, the sales ring of which has been secured for the clinical demonstrations, while it is also convenient to Eastman's abattoirs, where the pathological display will be located. There are plenty of hotels in close proximity to the Academy of Medicine, and the sub-committee was instructed to pursue its work by securing the most advantagious hotel to be designated "headquarters."

While the chief item in the entertainment of the guests has not been definitely settled those who contemplate attending may be priming their stomachs for an old-fashioned Rhode Island clam-bake, at one of the near-by seaside resorts, to reach which a steamer will probably be chartered for the exclusive use of the guests, and if the destination of the excursionists is as suggested, the association and its friends will enjoy a fine sail through New York harbor, the Narrows, past the great naval fortifications, and out to sea, skirting some of the grandest scenery which this section affords.

It is anticipated, and the committee are enthusiastically encouraging the idea, that as many as possible will bring the lady members of their households, as New York affords many features of entrancing interest to the fair sex, particularly in the great shopping districts. Not being possessed of an exposition to entertain the guests with, as has been the case with Nashville and Omaha, yet there are so many permanent points of interest to those not familiar with the city that some weeks could be consumed without exhausting her countless resources for entertainment and interest. The attendance of ladies at the past few meetings has been such an added charm to the occasion that the committee emphasizes its desire to enlarge upon the innovation this year.

It is certain that the banquet will be held on the evening of the second day, and the committee are pursuing their investigations with the object of securing a satisfactory *menu* at a more popular price than hitherto, to the end that all will attend.

Dr. James L. Robertson, President of the New York County Veterinary Medical Association, who is one of the oldest members of the A. V. M. A., and for many years its treasurer, will

in all probability welcome the Association to Gotham. If he simply smiles on the visitors they will feel that the welcome is sincere, and that they may consider themselves at home.

The suggestion of Secretary Stewart that the discussion upon Meat Inspection begun at Omaha be continued in New York, is certainly a valuable one. The immensity of the subject, and its importance surely justify it.

Since the announcement made in the May REVIEW the following papers have been promised for the programme of the coming meeting: "The Suppression of Tuberculosis in Pennsylvania," by Dr. Leonard Pearson; "Notes on the Healing Process in Ovariotomy," by Dr. M. H. Reynolds; "Surgical Interference for the Cure of the Cribbing Habit," by Dr. S. J. J. Hargar, the operation to be demonstrated before the association; "Disinfection," by Dr. E. A. A. Grange, demonstrating some agents and methods; and probably "Schmidt's Treatment of Parturient Paresis," by Dr. Olof Schwarzkopf, with statistics gathered from American sources.

MASSACHUSETTS VETERINARY ASSOCIATION.

The fifteenth annual meeting was held April 26th, at the Parker House, Boston, Mass., and the following members were present: Drs. Beckett, Burr, Cronon, Emerson, Frothingham, Harrington, Howard, LaBaw, Lee, Lewis, McLoughlin, Osgood, Parker, Penniman, Peters, Peterson, Pierce, Plasket, Rogers, Williams, Winslow, Winchester, Stickney, Etienne, Clark. Guests of the evening were: W. O. Underwood, A. B., lecturer on Warranty and Evidence at Veterinary Dep't, Harvard University; Leander F. Herrick, of the Massachusetts Cattle Commission; James Kimball, of the Board of Health of Springfield, Mass.

At the business meeting the following officers were elected for the ensuing year: President, Langdon Frothingham, M. D. V.; First Vice-President, Howard P. Rogers, M. D. V.; Second Vice-President, Daniel Emerson, M. D. V.; Treasurer and Secretary, Henry S. Lewis, M. D. V. Executive Committee—W. L. LaBaw, D. V. S., Geo. Lee, D. V. S., E. T. Harrington, M. D. V., G. P. Penniman, D. V. S., B. D. Pierce, M. R. C. V. S.

At the close of the business meeting the association adjourned to the banquet hall, where toastmaster Dr. J. F. Winchester called on the following gentlemen; W. O. Underwood, J. M. Parker, L. F. Herrick, Langdon Frothingham, James Kim-

ball, J. R. McLoughlin, Austin Peters, P. J. Cronon, L. H. Howard, Alexander Burr, B. D. Pierce, H. S. Lewis, J. H. Stickney.
H. S. LEWIS, *Secretary.*

THE WESTCHESTER COUNTY V. M. SOCIETY held its annual banquet at Morello's, New York City, on Tuesday evening, May 16th, and we acknowledge the courtesy of an invitation to be present, but we were forced to regretfully decline at the last moment. The committee in charge were Drs. R. R. Morrison, M. J. Tewey and W. B. Moorehouse.

ALUMNI MEETINGS.

ALUMNI ASSOCIATION OF THE AMERICAN VETERINARY COLLEGE.

This association held its annual meeting in the lecture-room of the building on Tuesday afternoon, April 4, and reelected the officers of the preceding year—Dr. Wm. H. Pendry, President; Dr. Charles E. Clayton, Secretary. The business of the meeting consisted chiefly in discussion of the "Silver Anniversary," to be held in September, 1899, during the week of the convention of the American Veterinary Medical Association, and much enthusiasm was indulged in with reference to that auspicious occasion.

The twenty-fourth annual dinner took place at the Hotel Metropole in the evening, and a goodly number of members and friends of the college occupied seats around the tastefully arranged tables. Dr. E. B. Ackerman, of Brooklyn, was toastmaster, and the following stated toasts were responded to: "The Value of a Professional Education," Dr. F. D. Weisse, President of the Board of Trustees; "Our Sister Profession," Prof. J. B. Stein; "The Horse and the Fair Sex," Hon. Hosea B. Perkins—a wonderfully entertaining orator of eighty years; "The Automobile," Prof. Roscoe R. Bell, who thought that they do not and will not compete with the horse in his true sphere; "The Horse," Prof. J. L. Robertson; "The Army Veterinarian," Dr. W. Horace Hoskins; "The Old Man," Dr. William H. Pendry. Representatives of various classes also made short addresses, among them Drs. Wm. Herbert Lowe, H. D. Hanson, Robert W. Ellis, J. B. Hopper, Charles E. Clayton, W. B. E. Miller, and others. A cablegram was read from Prof. Liautard, announcing that while he was far away his heart was

right at the banquet table, and many affectionate words were spoken concerning him, and his health was drank with enthusiasm.

M'GILL UNIVERSITY, FACULTY OF COMPARATIVE MEDICINE AND VETERINARY SCIENCE.

The first annual reunion of the alumni association of this university was held in Montreal, Feb. 11, which was attended by a large number from Canada and the United States. Dr. John R. McLaughlin, of Massachusetts, occupied the chair when the meeting was called to order at 2 o'clock. Dean McEachran being absent on account of sickness, his address of welcome was read by Prof. Baker, at the conclusion of which the election of officers took place, resulting as follows: President, Dr. John M. Parker, Haverhill, Mass.; Secretary, Dr. D. Comstock, Albany, N. Y. Executive Committee—Prof. M. C. Baker, Montreal; Dr. N. P. Hinkley, Buffalo, N. Y.; Dr. A. W. Clement, Baltimore, Md.; Dr. N. P. Walsh, Huntingdon, P. Q.; Dr. Gorham, Bellows Falls, Vt.

An adjournment then took place to visit the new buildings at the university, which were a pleasant surprise to the older alumni. The evening was spent in pleasant reunion and dinner at the Windsor Hotel, at which forty-five sat down to a delightful *ménü*. Dr. Parker occupied the chair, and toasts were responded to as follows: "The Queen," the national anthem, "God Save the Queen," being sung; "The President of the United States," the "Star Spangled Banner" being sung; "McGill University," Dr. G. P. Girdwood; "The Massachusetts Alumni Association," Dr. Jno. R. McLaughlin; "The Dean," Prof. Wesley Mills; "The Graduates," Dr. C. J. Alloway and Dr. Sugden; "Professors of the Faculty," Dr. Baker; "The Ladies," Dr. Gerald Dillon. Numerous vocal selections were rendered by members, and the opinion of all was that the reunion was delightful and the association successfully launched.

NEWS AND ITEMS.

WHO will take the initiative in organizing "The Veterinarians' Mutual Benefit Association"?

THE PAST SPRING has on the whole been the best "veterinary season" since 1893. Secretary Stewart says his letters from all over the country are very cheerful and encouraging.

DR. H. D. GILL, of New York, was one of the veterinarians of both the Baltimore and Philadelphia horse shows.

"THE REVIEW GROWS BETTER WITH EACH VOLUME, and I wish it continued success."—*E. M. Nighbert, Mt. Sterling, Ill.*

DR. BRIMHALL, field veterinarian to the Minnesota State Board of Health, is spending considerable time in the State Board of Health bacteriological laboratory.

DR. J. E. RYDER'S paper on "Examinations for Soundness," read before the February meeting of the Veterinary Medical Association of New York County, was recently printed in the *Horse Fancier*.

I REGRET that there are no other veterinary surgeons of any qualification on this island whom I could recommend to become subscribers to your excellent REVIEW.—*D. Thompson, M. R. C. V. S., San Fernando, Trinidad.*

I TAKE GREAT PLEASURE IN READING THE REVIEW, for its pages are full of valuable material which no veterinarian can afford to miss. I wish you every success to reward you for your noble work.—*James M. O'Reilly, M. D. C., Merrill, Wis.*

DR. RALPH C. JENKS, of Sing Sing, N. Y., who has for the past two years been assistant to Dr. Roscoe R. Bell, of Brooklyn, has located for practice at his home, and has been succeeded by Dr. Walter Lincoln Bell, McGill, '97, as assistant to Dr. B.

IF NEW YORK STATE should do as well next September as Nebraska did last fall in the matter of attendance upon the A. V. M. A. (98 per cent. of her graduates) there will be a mighty "Jubilee" in Gotham. And then the populous seaboard States are yet to be reckoned upon.

DR. WM. HERBERT LOWE, Treasurer of the American Veterinary Medical Association, has been highly honored at his home in Paterson, N. J. After serving under the city government for ten years, he is unanimously reelected to the office of City Veterinarian of Paterson, N. J. Every member of the Board of Aldermen (both Republicans and Democrats) voted for Dr. Lowe's reelection.

THE MINNESOTA LEGISLATURE, recently adjourned, has increased the annual appropriation for dealing with infectious diseases of animals by \$2500. The last legislature gave an increase of \$3000. This makes a very helpful sort of a compliment for the veterinary department of the Minnesota State Board of Health under Dr. Reynolds.

IS CRYPTORCHIDY HEREDITARY?—Dr. W. L. Williams, of Ithaca, N. Y., writes: "Among 'Items' in May REVIEW I

note your remark regarding Dr. Butterfield's belief in the heredity of cryptorchidy. I enclose a clipping from *Country Gentleman*, contributed by me, in which you will note I support his contention with some data."

MR. CARL W. GAY, of the senior class of the New York State Veterinary College, has been elected to a Fellowship in Veterinary Science for next year. This fellowship carries a remuneration of \$400, the student to take a major and minor subject, and is subject to a demand on his time for teaching to the amount of four university hours per week. He will also aid Prof. Williams in clinical instruction. This college has also been granted a Scholarship in Veterinary Science which will be open to freshmen in competitive examination.

NON NOBIS SOLUM.—We know some veterinarians of large experience and keen observation who delight in detailing absorbingly interesting cases in private conversation, and we never enjoy one of those pleasant hours that we do not relinquish it with regret that they stoically refuse to reduce some of such valuable experience to REVIEW manuscript, that our readers might reap interest and profit therefrom. George H. Berns, of Brooklyn, is a good example of this class, and there are hundreds of others all over this country. They simply do not appreciate how grateful the profession at large would be for it, and do not heed the legend which heads the REVIEW department of "Reports of Cases."

AN ADDITION TO THE OPERATING TABLE.—The inventive brain of Prof. Williams, of the New York State Veterinary College, has evolved a device which is best described in his own words, as follows: "I have recently devised an operating ambulance for transferring anæsthetized horses and cattle from the operating table to the stall or, in good weather, to the lawn. While heretofore we have been obliged to wait for 30 minutes to two or even more hours before a horse could be taken from the table, it is now but the work of a few minutes to get the patient comfortably located in a box stall or on the green lawn, and under these conditions the animal recovers more rapidly and regains his feet more safely."

ANIMAL HOMES IN INDIA.—A Calcutta newspaper just received, contains an interesting account of the workhouse or asylum for aged and infirm beasts and birds, which was established some thirteen years ago by a society of influential Hindus. It is near the Sodepur Station, about ten miles from Calcutta, and is under the control of a manager, with a staff of

eighty servants and an experienced veterinary surgeon. In this place at present there are 979 animal paupers—129 bulls, 307 cows, 171 calves, 72 horses, 13 water buffaloes, 69 sheep, 15 goats, 141 pigeons, 44 cocks and hens, 4 cats, 3 monkeys and 5 dogs. The asylum is described as being systematically and mercifully managed. The cows have especially a good time of it, inasmuch as, on festal occasions, natives go from far and near to decorate and worship them. The mysterious lower world of animal life is regarded in India with more reverence and kindliness than among Christian people. The one great fact of abstinence from flesh food produces an extraordinary effect among Hindu communities. A newly arrived European walking in Poona or Baroda or Nassick, or any such Brahmanic capital, would mark with wonder how the lower creatures have understood and acted upon this tacit compact of peace. In the densest portions of the towns the monkeys sit and chatter on the roof ridges, the striped squirrels race up and down the shop poles, the green parrots fly screaming about the streets, the doves perch and coo and nest everywhere, the flying foxes hang over the most frequented wells and tanks, the mongoose scurries in and out of the garden gates, the kites and crows frequent the market places, jungle doves and birds of all sorts forage boldly for food, and at night even the jackals steal impudently down into the suburbs.

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In making up my REVIEWS to be bound I am short of the following numbers: Vol. XIII, July, September, October (1889). As I cannot obtain these from the publishers, I will give the regular rates or a slight advance, or will exchange any of the following which are duplicated in my file: Vol. XIV, October (1890); Vol. XIX, February, March, and April (1896). Address ROBERT W. ELLIS, D. V. S., 509 W. 152d Street, New York City.